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Density Distribution, Interlevel Correlations and Variation with Wind

ALLEN E. COLE AND ARNOLD COURT

METEOROLOGICAL DEVELOPMENT LABORATORY PROJECT 8624

AIR FORCE CAMBRIDGE RESEARCH LABORATORIES, OFFICE OF AEROSPACE RESEARCH, UNITED STATES AIR FORCE

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Abstract

Geographical, seasonal, and day-to-day variations in the vertical distribution of atmospheric density for altitudes up to 30 km are analyzed. Variability is least at 7 to 8 km, the isopycnic level, where densities do not depart from the standard by more than 1 or 2 percent in any season or area. Between 24 and 26 km, density changes little with latitude but markedly with season. At the level of greatest seasonal variability, around 15 km, the relative departures from standard of mean seasonal densities is strictly according to latitude. Largest negative departures occur at the northernmost location; largest positive, at the southernmost. The greatest difference between the two extreme profiles, nearly 20 percent, occurs in winter.

The largest day-to-day variations around monthly means occur near the tropopause. Coefficients of variation range from approximately 2 percent at Tampa in the summer to 6 percent at St. Paul Island in the winter.

Although the correlation of density with wind speed is significant statistically, and of theoretical interest, it may have little practical importance in the design of aerospace vehicles.

Contents

Density Distribution, Inter-Level Correlations, and Variation With Wind

1. INTRODUCTION

Density is a fundamental property of air, yet it has not been studied as intensively as two other properties to which it is intimately related—temperature and pressure. The resulting lack of information about atmospheric density is keenly felt by designers of aerospace equipment because their supersonic vehicles are affected more directly by density than by other atmospheric attributes except wind.

Geographical, seasonal, and day-to-day variations in the vertical distribution of atmospheric density and winds are important meteorological factors in the design and operation of missile and bombing systems. Changes in the assumed distribution of atmospheric density affect the deceleration and range of free-falling bombs and ballistic missiles which have a high forward velocity; variations in wind affect both range and cross range. The relation between wind velocity and density at the various levels must also be considered in any investigation of their combined effect on a trajectory.

This Survey is the result of a continuing effort to compile, analyze, and present information in a form suitable for use by designers of aerospace vehicles. Appendix I contains tables of the correlation of density at one level with that at another, by months, for six places. Table 4 presents the correlation of density with wind, separately for the west-to-east and south-to-north components. Appendix II contains tables, by months, of the multiple correlation and regression of density on both wind components. Salient features of the tabular information are discussed in the following sections.

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1.1 Previous Work

Sissenwine, et al[7] have presented a statistical method for estimating variations in range of ballistic objects caused by changes in atmospheric density. Arrays of seasonal means and standard deviations of density, for 2-km intervals of altitude up to 28 km, and coefficients of correlation between levels, are provided in their report for such use.

The mean effect, E, of atmospheric density on the range of a missile can be determined for a specific location by computer 'flights' through mean monthly or seasonal density profiles, given proper influence coefficients, c_i, for the missile at the various levels:

$$E = \Sigma c_i \bar{\rho}_i \tag{1}$$

where $\bar{\rho}_i$ is the mean monthly density at the i'th level. The integrated standard deviation in range or deceleration, σ, due to day-to-day variations from the mean seasonal or monthly density profiles, can be obtained:

$$\sigma^2 = \Sigma_{i,j} c_i \sigma_i r_{ij} c_j \sigma_j \tag{2}$$

where c_i and c_j are influence coefficients at the i'th and j'th levels, σ_i and σ_j are the standard deviations of density at the two levels, and r_{ij} is the correlation coefficient between densities at the two levels. Earlier, Court[1] had presented similar statistical arrays of the u and v components of the wind at seven locations. Such wind data are now available for more than 60 locations. These have been used to determine the integrated effect, on the range and cross range of bombs and missiles, of day-to-day variations of wind from mean monthly or seasonal profiles.

Only a slight relation between integrated wind and density profiles below 12, 16, and 24 km was found by Spreen, et al.[8] Their results, however, are not applicable to investigations of the over-all effect of density and wind on a free-falling object if the influence coefficients, based on the aerodynamic characteristics and reentry angle of the object, vary with altitude. The relation between density and winds at specific altitudes, rather than through an integrated layer, is required for such an investigation.

This Survey supplements and extends upward the density data previously provided,[7] and presents coefficients of correlation between wind and density at specific levels for several locations.

2. DATA SOURCES AND ACCURACY

Two sets of tabulations, originally prepared at different times for different purposes, have been used for this study. They were provided by the Data Processing Division (Asheville, N.C.) of the Climatic Center, Air Weather Service. For only two stations, Washington, D.C. and Great Falls, Montana, were both density interlevel and density-wind correlations available. Table 1 gives locations of stations used and periods of record for each type of correlation.

The basic rawinsonde observations were made by use of a variety of instruments, whose accuracy increased with time. During the 10 years of the density-wind study, 1948 through 1957, most of the stations progressed from the use of SCR-658 equipment to GMD-1A; consequently, the heights to which soundings were made and wind data acquired increased progressively.

As higher soundings were obtained, corrections for curvature of the earth were incorporated into the wind computations, generally after 1955. The interlevel correlations are based on a later 3-year period, 1958 through 1960. During this period all stations used GMD-1 equipment, except that Tampa used SCR-658 until August 1960 and Washington, D.C. changed to WBRT-57 in June 1959. All these changes in equipment, and increasing heights attained by better balloons, inevitably introduced some bias into the tabulations; but the extent of this bias cannot be evaluated directly.

On each sounding, densities (ρ g/m^3) were computed at the standard levels of pressure (p, mb) by the standard formula

$$\rho = 0.34838\ p/T_v . \tag{3}$$

The virtual temperature (T_v) was obtained from

$$T_v = T/(1 - 0.0379\ U\ e_s/p), \tag{4}$$

where T is the absolute temperature (K); U is the relative humidity; and e_s is the saturation vapor pressure (mb). Densities at 2-km intervals were obtained by linear interpolation from those computed for the individual pressure surfaces, whose heights had been computed hypsometrically. Errors introduced by such interpolation are negligible except at the highest elevations, where they may be as much as 0.5 percent. Wind data had originally been recorded at 2-km intervals.

Johannessen[4] estimated the rms errors of densities computed from GMD-1A radiosonde temperature and pressure-height observations to be 0.3 percent at 6 km, 0.5 percent at 12 km, 0.7 percent at 18 km, 0.9 percent at 24 km, and 1.2 percent at 30 km. Temperature and pressure errors were assumed to be normally distributed and independent of each other. These errors have little effect on the mean monthly values given in the Appendices: the rms error of the mean

Table 1. Locations and Periods of Record of Stations Studied

STATION	ALTITUDE (m)	LOCATION		Period of Record for Correlations	
		Latitude	Longitude	Interlevel density	Density-wind
Shemya Island, Alaska	80	72°44'N	174°07'E		Jan 48 - Jun 57*
St. Paul Island, Alaska	10	57°99'N	170°13'W	Jan 58 - Dec 60	
Tatoosh Island, Washington	31	48°23'N	124°44'W		Jan 48 - Dec 57
Santa Maria, California	74	34°54'N	120°27'W		Jan 48 - Dec 57
Great Falls, Montana	1123	47°29'N	111°21'W	Jan 58 - Dec 60	
Omaha, Nebraska	403	41°22'N	96°01'W	Jan 58 - Dec 60	
Columbia, Missouri	238	38°58'N	92°22'W		Jan 48 - Dec 57
Tampa, Florida	8	27°58'N	82°32'W	Jan 58 - Dec 60	
Cape Canaveral, Florida	5	28°29'N	80°33'W		Feb 50 - Sep 57
Washington, D.C.	88	38°50'N	76°57'W	Jan 58 - Dec 60	
Thule, Greenland	34	76°33'N	68°49'N		Jan 48 - Sep 57
Bitberg, Germany	369	49°57'N	06°34'E	Jan 58 - Aug 60	
Wiesbaden, Germany	139	50°03'N	08°20'E		Jan 48 - Dec 57†

*Jul 49 - Dec 50 missing

†May 50; Feb - Aug, Oct, Nov 51; Feb, Mar, Jun 52, missing

monthly value is the rms error of the individual observations divided by the square root of the number of observations, assumed independent. However, careful evaluation must be made of their effect on the coefficients of variation to determine how much of the variability indicated by the uncorrected soundings is true.

Random observational errors tend to increase the coefficients of variability about the mean monthly values, since the observed mean square variation is the sum of the true mean square variation and square observational error. At 30 km the estimated rms observational error of 1.2 percent is greater than the observed standard deviations of day-to-day variability around the mean summer values at Washington, Omaha, Bitberg, and St. Paul Island. This discrepancy may arise from the assumption that temperature and pressure errors are independent.

2.1 Density Correlations

Coefficients of correlation of density at pairs of levels, together with monthly means and standard deviations, for the surface, 1 km, and each even kilometer level up to at least 30 km are given in Appendix I by months for 6 of the 13 locations shown in Table 1.

The period of record on which the data in Appendix I are based is relatively short: three years from January 1958 to December 1960. Yet the January and July means for this 3-year period for various altitudes up to 24 km at St. Paul Island, Great Falls, and Tampa differ (Table 2) less than 1 percent in almost all cases from the previous 5-year means.[7] With few exceptions, standard deviations based on the 3-year sample differ (Table 3) by less than 0.5 percent from the 5-year values.

2.2 Wind and Density

Coefficients of correlation of atmospheric density with the strength of the zonal (west to east) and meridional (south to north) components of the wind for each season, at 2-km intervals up to 24 km, are given in Table 5 for 9 of the 13 stations listed in Table 1. Mean monthly values and standard deviations of density and u and v components of the wind at 10, 12, 14, and 16 km, the multiple regression equations of density on the wind components, and the standard error of estimate are given in Appendix II for each location.

3. DENSITY PROFILES

In an isothermal atmosphere, density decreases exponentially with height. Deviations from such a regular decrease, caused by differences in temperature

distribution, are discussed in this section.

3.1 Geographical Variations

Variations in mean monthly density profiles with geographical location are shown in Figure 1 for the midseason months, as percent departures from the U.S. Standard Atmosphere, 1962. The most prominent features in these figures are the convergence of the individual profiles near 8 and 24 km.

The altitude of minimum seasonal and geographical variability near 8 km is called the isopycnic level. Mean monthly profiles do not depart by more than 1 or 2 percent from the Standard at this altitude, regardless of season or location. Most profiles cross the Standard at the isopycnic level, going from negative to positive departures or vice versa. This feature of the atmosphere was described by Sen[6] in one of the first systematic investigations of atmospheric density. Humphreys,[3] DoPorto,[2] Morgan,[5] Sissenwine, et al,[7] and others have also discussed this isopycnic surface.

The second level of minimum geographical variation near 24 km, unlike the isopycnic level, tends to change position with the seasons. Departures from standard of the mean point of converging profiles are, roughly: -2 percent in the winter, nearly zero in spring, +7 percent in summer, and +2 percent again in autumn. The convergence of mean seasonal density profiles near 24 km was mentioned by Sissenwine, et al,[7] but the sparse data then available prevented any firm conclusion regarding its actual existence. The data of Figure 1 clearly indicated that the density near 24 to 26 km varies little geographically but markedly with season.

Figure 1 shows that the density profiles for Tampa and St. Paul Island form an envelope for the other four profiles. At the level of maximum variability, around 15 km, in all four midseason months the relative order of the six profiles is the same; that is, strictly according to latitude. The largest negative deviations from Standard are at the northernmost station (St. Paul); the largest positive departures are at the southernmost station (Tampa). The greatest difference between these two profiles, almost 20 percent, occurs near 16 km in winter.

3.2 Seasonal Variation

Mean density profiles to 30 km for the midseason months at each of the six locations are shown in Figure 2. The stations are arranged by latitude: the three northern ones are on the left; the southern ones are on the right.

Seasonal variation is least at the isopycnic level (approximately 8 km) and is greatest above it at between 12 and 16 km, ranging from approximately 5 percent

at Tampa to 13 percent at Washington. The variability decreases slightly above 16 km, reaching another minimum between 20 and 26 km and then increases gradually above this level.

The largest seasonal variations in the mean profiles occur at the mid-latitude stations (Washington, Omaha, Great Falls, and Bitberg) where the entire shape of the profile changes with season. Little seasonal difference is shown in the shape of the Tampa profiles, and at St. Paul Island only the July profile differs from the others.

4. INTER-DIURNAL VARIABILITY

The day-to-day variability of density of each level around mean monthly values is given for each altitude and station in Appendix I in terms of the coefficients of variation (100 × SD/mean). January and July values are plotted versus altitude in Figure 3. The stations are arranged from south to north.

The largest coefficients of variation occur at approximately the altitude of the tropopause, which occurs at 16 km at Tampa and at 12 km in winter and 14 km in summer at Washington, Omaha, and Great Falls. At Bitberg (51°N) the level of maximum variability appears to remain constant throughout the year, but presumably would be shown to vary somewhat if data were available for altitude increments of 0.5 of 1 km rather than 2 km. A seasonal variation occurs at St. Paul Island (57°N).

The level of least inter-diurnal variability, where the coefficients of variation do not exceed 1.5 percent, occurs in the vicinity of the isopycnic level near 8 km. A second level of small variability exists between 22 and 26 km. This is also a region of little geographical variability.

At the levels of maximum variability in subtropical, mid-latitude and subarctic locations, Sissenwine, et al[7] found that the percentage of daily density observations within one standard deviation of the mean was, on the average, slightly higher than that for a Gaussian distribution (Table 4).

Sissenwine's investigation indicates that by assuming density to have Gaussian distribution at all levels in computing [by Eq. (1)] the variation in range of a free-falling object which is exceeded 50 percent of the time causes an error of less than 15 percent, generally less than 10 percent. Extreme errors yield larger variations in range than will actually be experienced—a conservative design error.

5. INTER-LEVEL CORRELATIONS

A very interesting feature of the interlevel density correlations (Appendix I) is the negative relationship between densities at levels above and below the isopycnic

Table 2. Percentage Departure of 3-Year Means (1958-60) From 5-Year Means (1952-57)

Altitude (km)	St. Paul Jan	St. Paul Jul	Great Falls Jan	Great Falls Jul	Washington Jan	Washington Jul	Tampa Jan	Tampa Jul
4	-0.2	+0.5	-0.2	+0.3	0.0	0.0	0.0	-1.3
8	-0.8	0.0	+0.2	+0.6	-0.4	0.0	-0.6	0.0
12	-2.1	-1.3	+2.0	+0.3	0.0	-1.5	-0.3	0.0
16	-1.3	-1.2	+0.6	-0.6	-0.6	-0.5	-0.5	0.0
20	-0.7	-0.6	+0.5	+0.2	-0.7	+0.2	-1.1	0.0
24	+0.4	-0.2	+0.4	+0.6	-0.7	+0.2	0.0	-2.0

Table 3. Differences in Coefficients of Variation of Density (1958-60 Minus 1952-57)

Altitude (km)	St. Paul Jan	St. Paul Jul	Great Falls Jan	Great Falls Jul	Washington Jan	Washington Jul	Tampa Jan	Tampa Jul
4	+0.01	-0.12	+0.26	-0.06	+0.02	-0.09	+0.22	+0.05
8	-0.39	-0.14	-0.03	-0.13	+0.10	-0.01	+0.16	-0.03
12	-1.47	+0.49	+0.85	-0.09	-0.03	-0.33	-0.20	0.00
16	+0.49	-0.41	+0.05	-0.21	-0.12	-0.32	+1.08	+0.19
20	-0.15	-0.01	-0.39	-0.09	-0.08	-0.34	-0.39	-0.07
24	+1.30	-0.18	-0.36	-0.21	+0.08	-0.35	-0.44	-0.24

Table 4. Characteristics of Frequency Distributions of Density at Altitude of Greatest Variability in January and July (From Sissenwine *et al*[7])

	Altitude of Max Variability (km)		Mean Density (g/m^3)		Std Dev (g/m^3)		Percent within 1 Std Dev.		Percent within 2 Std Dev.	
	Jan	Jul	Jan	Jul	Jan	Jul	Jan	Jul	Jan	Jul
Tampa	12	16	328.6	190.6	8.4	2.7	75	79	93	96
Great Falls	12	14	295.7	242.9	11.6	8.3	68	67	95	99
St. Paul	12	12	287.0	311.1	17.5	13.7	68	63	94	99

level. When density near the surface is above normal, pressure decreases more rapidly than usual with altitude, resulting in lower pressures and densities above 8 km. This compensating effect allows surface pressure to remain relatively constant even though large variations in density that occur at individual levels above or below are much smaller than between levels removed from this altitude interval.

The manner in which the correlation between the density at two levels decreases (or decays') with increasing separation between the levels is an example of the general problem of correlation decay. Similar correlation decay is found for most climatic elements—wind speed, temperature, precipitation, pressure—as the horizontal or vertical distance between the points of observation, or time between observations, increases. As yet, no fully satisfactory description of the decay rate, based on fundamental properties or assumptions, is available. Consequently many empirical formulas, valid for specific elements over restricted ranges, have been proposed.

Sissenwine et al[7] found that the correlation between the density at 12 km and that at 14, 16, 18, 20, 22, and 24 km could be approximated by $r_h = c^h$, where h is the separation (km) and the constant c is somewhat less than unity. This formula is a special case of the general exponential decay rule that is used in many other applications, $r_h = \exp(-ah)$, with $c = \exp(-a)$ or $a = -\log_e c$.

Coefficients of correlation between density at 12 km and those at levels up to 24 km are plotted in Figure 4 for January and July at each station. In January (upper part of Figure 4) the decay in correlations at St. Paul Island and Bitburg is approximated reasonably well between 12 and 24 km by an exponential formula with $a = 0.05$. Except for Tampa, the decays in correlation at the other stations follow this same formula for the first 6 km but deviate widely from it at separations greater than 6 km.

In July (lower part of Figure 4) the decay in correlations at Bitburg and St. Paul Island is reasonably well represented by an exponential formula with $a = 0.08$, but the correlation decays at the other stations are not exponential.

For the region above 12 km, which is always above the isopycnic level, correlation decay with layer separation is generally slower in winter than in summer, and slower at northern stations than at southern ones (Figure 4).

At separations of 2 to 6 km the rate of correlation decay decreases strictly with increasing latitude in both January and July. It is least at St. Paul and greatest at Tampa—where the 12 to 16-km correlation in July is indicated as slightly negative.

6. DENSITY-WIND CORRELATIONS

6.1 Magnitude

The correlation of atmospheric density with strength of zonal (u) and meridional (v) components of the wind, separately, is not very high at any level (0.5 to 24 km) investigated. (See Table 5.) The largest is -0.69 with the 24-km west-to-east wind at Columbia, Missouri in autumn. Only two others are as high as 0.60 and both are at Cape Canaveral. Thus no more than 40 percent of the variability of density can be explained by linear regression on meridional or zonal advection.

Correlations of density with south-to-north air movements are generally negative at all levels up to 24 km. This implies that winds from the north bring air with somewhat higher than average density and those from the south bring air of lower than average density. Correlations range from +0.22 (at 6 km over Santa Maria in summer) to -0.67 (at 0.5 km over Cape Canaveral in winter).

Above 16 km, correlations of density with west-to-east air movement are very slight or negative at all seasons; only over Thule in winter is air from the east associated with higher than average density. Below 16 km, variations in the west-to-east wind have different effects on density, depending on season and location.

6.2 Advection

In the section on interlevel density correlations, the negative correlations between densities at levels above and below 8 km have been discussed. As density increases below 8 km, pressure decreases more rapidly with height; this results in lower pressures and densities above 8 km. Consequently cold-air advection, accompanied by higher densities in the lower levels, tends to decrease densities at levels above 8 km. Because of this compensating effect in the atmosphere, high correlations would not be expected between wind and densities at altitudes above 8 km or at altitudes near the 8-km isopycnic level, where density remains relatively constant. Correlations between wind and density should be greatest near the surface, where pressure remains relatively constant, and at locations where a specific wind direction is directly associated with warm or cold-air advection.

Correlation coefficients of density with the south-to-north wind component are relatively high for altitudes up to 2 km at four inland stations (Wiesbaden, Columbia, Great Falls, and Washington) where northerly winds are normally associated with cold-air advection. The cumulative percentage distributions of the correlation at various levels for all four stations and seasons combined are as follows:

Table 5. Correlation of Atmospheric Density with Strength of West-to-East (u) and South-to-North (v) Components of Wind at Various Levels over Nine Stations, 1948-1957*, by Seasons.

In each Season column, correlation (decimal point omitted) of density with zonal wind (positive toward east) first figure, with meridional wind (positive toward north) second figure.

	Shemya, Aleutian Islands								Thule, Greenland								Wiesbaden, Germany							
	Winter		Spring		Summer		Autumn		Winter		Spring		Summer		Autumn		Winter		Spring		Summer		Autumn	
KM	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$
24	-42	+11	-33	+19	+18	-15	-36	-35	+22	-22	-28	-11	-19	-08	-46	-01	-39	-07	-58	-01	+04	-00	-59	+12
22	-44	-12	-27	+03	+00	-23	-30	-27	+34	-27	-27	-07	-18	-03	-38	+04	-40	-04	-51	-09	-04	-08	-56	+12
20	-39	-14	-15	-15	-02	-10	-22	-35	+34	-29	-21	-11	-13	+01	-23	+04	-36	-07	-45	-10	-09	-11	-45	+10
18	-37	-08	-04	-11	+12	-07	-17	-41	+31	-26	-15	-16	-10	-02	-05	+08	-22	-12	-32	-17	-11	-24	-29	+03
16	-30	+01	-07	+03	+25	-04	-07	-31	+22	-20	-08	-15	-06	-05	+11	+05	-11	-12	-22	-08	+05	-22	-17	-04
14	-20	+04	-02	-10	+24	-02	+05	-33	+22	-03	+03	-15	-00	-14	+20	+01	+01	-15	-13	-10	+06	-23	-09	-08
12	-05	+14	+15	-10	+22	-01	+18	-23	+31	+04	+15	-15	+08	-21	+30	+05	+03	-17	-05	-08	-01	-18	-05	-07
10	+02	+06	+05	-09	+06	-14	+04	-21	+28	+10	+17	-08	+07	-10	+25	+04	-02	-09	-15	-04	-21	-08	-09	+03
8	+05	-02	-05	-19	-06	-24	+05	-28	+22	+06	+07	-05	+03	-09	+08	-05	-27	+06	-37	-11	-35	-14	-33	+02
6	+19	-06	+03	-17	-15	-16	+16	-18	+21	-09	+07	-19	-05	-00	-01	-16	-39	-04	-27	-21	-18	-09	-26	-12
4	+38	-12	+15	-08	-14	-18	+21	-15	+16	-07	+07	-08	-07	+13	+05	-04	-33	-27	-20	-30	-07	-17	-15	-22
2	+32	-17	+17	-18	-15	-27	+19	-19	+07	+10	+05	+08	-07	+21	+10	+03	-41	-35	-15	-44	+11	-34	-10	-40
0.5	+10	-05	+02	-07	-19	-16	+04	-12	+14	-01	+07	+01	+10	+05	+20	-16	-56	-39	-06	-29	+18	-24	-12	-19

	Tatoosh, Washington								Great Falls, Montana								Washington, D. C.							
	Winter		Spring		Summer		Autumn		Winter		Spring		Summer		Autumn		Winter		Spring		Summer		Autumn	
Km	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$
24	-47	-01	-42	-06	-02	-03	-31	-06	+00	-24	-31	+04	-06	-08	-34	+17	-39	-10	-56	-12	-33	-09	-61	-10
22	-05	-15	-37	-01	-06	-15	-10	-00	-19	-19	-39	+20	-11	+08	-37	+02	-26	-23	-47	-16	-31	-03	-54	-16
20	-07	-02	-28	+03	+01	-16	-25	+01	-17	-20	-39	+12	-06	-09	-34	-18	-14	-14	-38	-24	-31	-09	-58	-25
18	+10	+02	-18	-02	+13	-18	-20	-04	-16	-15	-40	+01	+11	-01	-18	-23	+10	-11	-32	-27	-29	-15	-44	-27
16	+12	+02	-11	+00	+29	-12	-10	-03	-18	-27	-25	-03	+23	-05	-08	-19	+24	-12	-25	-24	-27	-09	-31	-32
14	+13	-04	-03	+00	+30	-08	-12	-05	-03	-32	-19	-05	+32	-07	+02	-18	+32	-15	-17	-23	-25	-08	-18	-25
12	+12	-06	+11	-02	+21	-08	-10	-03	+09	-32	-03	-07	+24	-12	+01	-14	+26	-10	-15	-19	-31	-10	-19	-30
10	+04	-06	+02	-01	+01	-02	-19	-02	+05	-22	-14	-04	-07	-18	-15	-06	+08	-11	-20	-20	-36	-21	-32	-39
8	-10	-05	-14	-02	-29	-06	-36	-00	-27	-07	-12	-10	-16	-14	-31	-03	-28	-28	-32	-34	-22	-19	-29	-38
6	-24	-01	-09	-07	-25	+04	-02	-02	-28	-00	+15	-23	-06	-13	-15	-13	-24	-29	-08	-27	-14	-13	-05	-17
4	-18	-20	+05	-17	-09	+05	+13	-17	-35	-19	+13	-38	+04	-36	-10	-32	-12	-31	+01	-27	-12	-10	+09	-07
2	-14	-41	+24	-19	+18	+11	+24	-14	-55	-35	-03	-29	+09	-26	-10	-30	-13	-45	+02	-37	-26	-18	+09	-23
0.5	-24	-46	+17	-10	+32	+02	+09	-11									-24	-40	-07	-33	-41	-15	+00	-30

	Santa Maria, California								Columbia, Missouri								Cape Canaveral, Florida							
	Winter		Spring		Summer		Autumn		Winter		Spring		Summer		Autumn		Winter		Spring		Summer		Autumn	
Km	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$	$r_{\rho u}$	$r_{\rho v}$
24	-27	-55	-48	-17	-33	+09	-57	+08	-31	-40	-59	-12	-48	-06	-69	-40	-25	-04	-26	-07	-21	-07	-57	-06
22	-15	-28	-24	-01	-17	+06	-43	-02	-20	-21	-50	-07	-40	-07	-55	-14	-32	+00	-30	-08	-22	-09	-60	+01
20	-15	-26	-20	-12	-18	+01	-40	-09	-10	+00	-46	+08	-33	+00	-48	+04	-29	-01	-17	-11	-10	-10	-50	-17
18	-14	-19	-25	-21	-27	+03	-35	-05	+01	-01	-39	+13	-28	+04	-34	+09	-24	+01	-19	-04	-15	-09	-40	-16
16	-09	-14	-16	-18	-40	+10	-30	+08	+11	-05	-29	+01	-33	+03	-18	+09	-35	-06	-28	-05	-26	+03	-57	-11
14	-01	-09	-06	-22	-33	+06	-10	+09	+19	-10	-21	-01	-26	+06	-06	+04	-29	-17	-24	-07	-22	-06	-47	-03
12	-01	-05	-05	-18	-26	-14	-07	-05	+16	-15	-16	+02	-30	-02	-14	+04	-34	-23	-39	-05	-30	-06	-45	-15
10	-14	-03	-12	-05	-15	-16	-20	-09	-02	-10	-20	-08	-27	-23	-34	-06	-58	-31	-46	-16	-23	-04	-16	-85
8	-33	-07	-19	-02	-11	+03	-33	-11	-28	-23	-19	-26	-12	-27	-32	-14	-53	-25	-29	-18	-13	-00	+09	-31
6	-27	-03	-18	+07	-15	+22	-21	-02	-17	-29	+06	-34	-03	-17	+01	-17	-30	-26	-15	-15	-10	+06	+09	-23
4	-01	+00	+10	+05	+09	+11	+01	-09	-08	-39	+15	-43	-10	-14	+17	-28	-15	-23	-08	-17	-07	+12	+02	-18
2	+20	-09	+34	-09	+23	-13	+24	-21	-19	-50	-01	-56	-39	-33	+05	-54	-21	-28	-10	-31	-19	+08	+06	-31
0.5	+08	-16	+16	-04	+04	+23	+11	-01	-18	-50	+00	-49	-24	-41	+10	-42	+00	-17	-08	-43	-21	+05	+14	-39

*Omitting Jul 1949 to Dec 1950 and Jul 1954 to Dec 1957 at Shemya; Oct-Dec 1957 at Thule; May 1950, Feb-Aug, Oct-Nov 1951, and Feb, Mar, Jun 1952 at Wiesbaden; Jan 1948 at Great Falls; 1948-1949, Jan 1950, and Nov-Dec 1957 at Cape Canaveral.

R	LEVEL (km) 0.5	2	4	6	8	10	12	14	16	18	20	22	24
< 0.20	17	6	31	63	63	69	88	75	75	75	81	81	81
< 0.30	33	25	56	94	88	94	88	94	94	100	100	100	88
< 0.40	58	63	94	100	100	100	100	100	100				88
< 0.50	92	81	100										100
< 0.60	100	100											

These data indicate higher correlations of density with the south-to-north wind component near the surface. At these four inland stations 67 percent are 0.30 or greater at 0.5 km compared to 12 percent at 12 km—the level of maximum inter-diurnal density variability. The relationship at the other five stations, all coastal locations, changes with season and is generally weaker.

6.3 Significance

Monthly means and standard deviations of the wind components and the density are given in Appendix II which also gives multiple regression equations and correlations of air density (g/m^3) on west-to-east (u) and south-to-north (v) wind (kt) for the 10- and 12-km levels. These data permit examination of the difference between the distribution of wind force at a given level, obtained by using the derived relationships, and that obtained by assuming independence between wind and density.

Over Cape Canaveral, winds are strongest at 12 km in January. Means and standard deviations (kt) of the two components are:

$$\bar{u} = 65.8, \ s_u = 35.8; \ \bar{v} = -3.0, \ s_v = 30.9.$$

The multiple regression of density (in g/m^3) on these components is

$$\rho = 334 - 0.084\,u - 0.053\,v$$

with multiple correlation of 0.37, standard error of estimate 6.4, compared to $\bar{\rho} = 328$, $s\rho = 8.1$. Thus the average density that would accompany a west wind of 173 kt, three standard deviations greater than the monthly mean, if the south-to-north wind were exactly average (3.0 kt from the south), would be:

$$334 - (0.084 \times 173) - 0.053 \times -3.0 = 320 \ g/m^3.$$

This is only about one standard deviation less than the over-all mean density of 328.

This lower density (320) would result in a wind force, for a 12-km wind of 173 kt (u = 173, v = -3), only 2.4 percent less than the force that would be computed in disregard of the correlation of -0.34 between density and west wind, that is, multiplying the mean density (328) by the square of the wind speed. Thus the correlation

of wind speed and density is of minor importance in problems involving wind effects primarily; however, where density itself is important, as in the deceleration of reentry vehicles, the rather slight correlation may require consideration.

7. CONCLUSIONS

a. The statistical arrays of monthly means, standard deviations, and inter-level correlations of atmospheric density presented in Appendix I will enable designers to investigate the effect, on the range of a free-falling body, of seasonal, latitudinal, and day-to-day variations in density profiles from the surface to 30 km. Errors in the computation of variations in range, exceeded 50 percent of the time, by assuming a Gaussian distribution of density, are generally less than 10 percent and seldom as much as 15 percent.

b. Below 30 km, density varies least near 8 km (the isopycnic surface) and between 24 and 26 km. Seasonal, geographical, and inter-diurnal variability is greatest near the tropopause between 12 and 16 km. A second but less-pronounced maximum occurs above 28 km.

c. The density at levels below 8 km is negatively correlated with the density at altitudes above this level.

d. Density has some correlation with wind speed and direction at various heights over some locations. The relationship is strongest and most consistent below 2 km and at inland stations. The low correlations at other levels are still significant statistically and of theoretical importance. Although they may be of little practical importance in the design of aerospace vehicles which are primarily affected by air motions (wind), they should be considered for those applications where density itself is important, as in vehicle deceleration.

Appendix I

Means, standard deviations, coefficients of variation, and interlevel correlations of atmospheric density, by months, at each of six stations (arranged in order of decreasing latitude).

Correlation of Atmospheric Density at Pairs of Levels over ST. PAUL ISLAND, Alaska, in JANUARY 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.007	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	186	186	186	186	186	186	183	182	176	170	161	156	140	123	86	59	28	3	1				
MN	1289	1155	1031	326	659	517	390	281	206	151	112	82.5	60.9	45.1	33.4	24.9	18.7	14.0	10.4				
SD	36.7	28.6	20.6	13.5	9.77	10.4	17.2	12.8	7.59	5.18	3.48	2.41	1.65	1.27	0.97	0.71	0.67						
CV	2.85	2.48	2.00	1.63	1.48	2.01	4.41	4.56	3.68	3.43	3.11	2.92	2.71	2.82	2.90	2.85	3.58						
1	.89																						
2	.73	.90																					
4	.47	.59	.78																				
6	.39	.44	.59	.84																			
8	.42	.27	.19	.16	.41																		
10	.27	.12	-.02	-.13	.05	.80																	
12	.23	.09	.01	-.02	.11	.69	.90																
14	.22	.09	.04	.02	.13	.64	.82	.95															
16	.20	.05	.02	.02	.15	.63	.76	.89	.97														
18	.23	.07	.04	.05	.17	.60	.70	.83	.93	.98													
20	.29	.13	.09	.05	.16	.58	.65	.78	.90	.94	.98												
22	.35	.18	.12	.02	.12	.55	.62	.72	.84	.89	.94	.97											
24	.49	.28	.18	.06	.15	.56	.55	.62	.74	.78	.84	.88	.95										
26	.46	.29	.23	.05	.10	.43	.40	.52	.68	.68	.76	.81	.86	.95									
28	.56	.45	.40	.26	.26	.33	.24	.35	.53	.53	.62	.68	.68	.73	.91								
30	.76	.56	.52	.37	.35	.38	.31	.37	.52	.47	.52	.61	.62	.73	.88	.98							
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Correlation of Atmospheric Density at Pairs of Levels over ST. PAUL ISLAND, Alaska, in FEBRUARY 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.007	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	169	168	167	166	156	165	162	158	156	150	140	136	123	93	63	37	18	5	[illegible]	1			
MN	1285	1151	1029	828	661	518	389	281	205	152	113	83.2	61.5	45.4	33.5	24.8	18.6	13.6	10.6	8.00			
SD	29.2	23.0	17.1	11.9	8.70	10.9	18.7	12.9	6.81	4.44	2.84	1.98	1.32	0.91	0.63	0.57	0.50	0.62					
CV	2.27	2.00	1.66	1.44	1.32	2.10	4.81	4.59	3.32	2.92	2.51	2.38	2.15	2.00	1.88	2.30	2.69	4.56					
1	.79																						
2	.51	.85																					
4	.29	.57	.81																				
6	.27	.38	.52	.76																			
8	.24	.07	-.03	-.01	.44																		
10	.09	-.09	-.21	-.24	.12	.81																	
12	.02	-.11	-.19	-.18	.13	.70	.95																
14	-.01	-.11	-.15	-.15	.13	.64	.89	.96															
16	-.01	-.09	-.12	-.13	.14	.58	.81	.90	.96														
18	.00	-.07	-.08	-.07	.19	.53	.73	.84	.93	.97													
20	-.00	-.11	-.12	-.12	.15	.48	.69	.78	.89	.92	.97												
22	.02	-.11	-.15	-.15	.09	.47	.65	.72	.83	.87	.92	.98											
24	.04	-.03	-.10	-.16	.06	.41	.57	.64	.76	.81	.86	.92	.95										
26	-.01	-.04	-.05	-.02	.25	.41	.61	.69	.81	.84	.86	.87	.85	.90									
28	-.25	-.2[illegible]	-.19	.00	.22	.22	.48	.57	.68	.73	.72	.72	.65	.67	.90								
30	-.66	-.4[illegible]	-.26	.05	.03	-.05	.17	.31	.50	.49	.43	.40	.24	.23	.62	.90							
32	-.97	-.9[illegible]	-.89	-.16	.16	-.09	-.08	.03	.25	.30	.28	.4[illegible]	.14	.01	.48	.84	.95						
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Correlation of Atmospheric Density at Pairs of Levels over St. PAUL ISLAND, Alaska, in MARCH 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.007	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	186	185	185	185	185	185	183	180	176	173	169	165	148	136	105	69	32	4					
MN	1306	1175	1047	838	667	524	396	286	209	153	114	83.2	61.4	45.4	33.6	24.9	18.5	13.6					
SD	28.1	24.2	19.0	14.5	11.4	11.8	17.7	12.9	6.37	3.77	2.61	1.97	1.30	0.85	0.65	0.49	0.31	0.19					
CV	2.15	2.06	1.81	1.73	1.71	2.25	4.47	4.51	3.05	2.46	2.29	2.37	2.12	1.87	1.93	1.97	1.68	1.40					
1	.88																						
2	.74	.85																					
4	.58	.65	.84																				
6	.49	.51	.63	.85																			
8	.51	.44	.39	.44	.66																		
10	.30	.19	.02	-.00	.22	.76																	
12	.13	.03	-.14	-.11	.13	.60	.91																
14	.06	-.02	-.20	-.18	.05	.52	.85	.96															
16	-.06	-.11	-.26	-.25	-.02	.37	.68	.81	.92														
18	-.15	-.15	-.27	-.29	-.07	.25	.49	.64	.77	.92													
20	-.21	-.20	-.27	-.30	-.10	.14	.32	.46	.60	.78	.94												
22	-.25	-.24	-.28	-.33	-.13	.07	.21	.34	.47	.67	.86	.96											
24	-.40	-.34	-.32	-.36	-.23	-.05	.07	.17	.29	.46	.66	.82	.92										
26	-.35	-.32	-.27	-.29	-.18	.03	.09	.08	.18	.29	.42	.59	.72	.90									
28	-.14	-.16	-.11	-.18	-.16	.05	.13	.09	.16	.24	.33	.49	.62	.76	.92								
30	.06	.11	.30	.34	.28	.39	.35	.22	.19	.11	.08	.16	.25	.40	.67	.90							
32	.84	.94	.93	.97	.91	.92	.79	.46	.31	-.12	-.48	-.65	-.60	-.78	-.51	.42	.89						
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Correlation of Atmospheric Density at Pairs of Levels over ST. PAUL ISLAND, Alaska, in APRIL 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.007	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	180	180	180	180	179	178	176	175	173	167	164	160	143	123	96	64	22	2					
MN	1297	1165	1039	930	661	519	391	285	210	155	115	84.7	62.5	46.1	34.1	25.1	18.4	13.4					
SD	27.7	22.5	17.1	11.9	8.74	10.3	16.8	12.3	7.04	4.85	2.93	1.88	1.11	0.66	0.48	0.44	0.32						
CV	2.14	1.93	1.65	1.43	1.32	1.98	4.30	4.32	3.35	3.13	2.55	2.22	1.78	1.43	1.41	1.75	1.74						
1	.83																						
2	.69	.88																					
4	.48	.63	.81																				
6	.31	.39	.50	.72																			
8	.14	.01	-.06	-.10	.37																		
10	-.04	-.19	-.33	-.47	-.14	.73																	
12	-.06	-.21	-.35	-.45	-.16	.60	.92																
14	-.06	-.21	-.34	-.42	-.13	.59	.86	.95															
16	-.11	-.26	-.38	-.41	-.16	.49	.75	.87	.96														
18	-.15	-.29	-.41	-.43	-.18	.44	.68	.80	.92	.97													
20	-.12	-.23	-.35	-.35	-.11	.42	.58	.71	.85	.92	.97												
22	.00	-.13	-.26	-.28	-.09	.34	.49	.63	.78	.88	.92	.97											
24	.07	-.01	-.16	-.20	-.07	.18	.30	.45	.64	.76	.82	.89	.95										
26	.26	.21	.05	-.06	-.06	.02	.09	.24	.43	.54	.61	.70	.81	.91									
28	.35	.28	.05	-.05	-.09	-.03	.07	.25	.41	.48	.53	.60	.67	.79	.95								
30	.56	.60	.45	.40	.04	.32	-.12	.27	.50	.56	.58	.61	.66	.80	.94	.98							
32																							
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36																							
38																							
40																							
42																							

Correlation of Atmospheric Density at Pairs of Levels over ST. PAUL ISLAND, Alaska, in MAY 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.007	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	186	185	184	183	183	183	182	178	174	172	165	163	156	134	76	41	14						
MN	1273	1142	1021	819	657	521	399	292	216	160	118	86.9	64.0	47.2	34.7	25.5	18.8						
SD	17.2	17.5	14.2	10.0	8.49	8.67	15.2	12.1	6.61	4.05	2.28	1.48	1.09	0.77	0.51	0.41	0.22						
CV	1.35	1.53	1.39	1.22	1.29	1.66	3.81	4.14	3.06	2.53	1.93	1.70	1.70	1.63	1.47	1.61	1.17						
1	.63																						
2	.46	.79																					
4	.53	.66	.82																				
6	.56	.44	.49	.78																			
8	.55	.14	.02	.27	.68																		
10	.42	-.07	-.35	-.19	.18	.65																	
12	.38	-.11	-.36	-.22	.02	.39	.81																
14	.28	-.19	-.40	-.25	-.03	.30	.70	.96															
16	.19	-.23	-.44	-.31	-.08	.26	.64	.90	.96														
18	.10	-.27	-.48	-.34	-.12	22	.60	.84	.91	.98													
20	-.03	-.30	-.50	-.34	-.08	.23	.52	.72	.81	.89	.94												
22	-.15	-.28	-.45	-.29	-.04	.23	.41	.55	.63	.74	.81	.93											
24	-.27	-.23	-.35	-.21	-.02	.17	.25	.35	.43	.55	.64	.81	.95										
26	-.40	-.41	-.44	-.22	-.01	.22	.25	.29	.35	.46	.56	.73	.88	.96									
28	-.38	-.39	-.28	-.13	.02	.15	.16	.23	.30	.37	.45	.65	.81	.89	.96								
30	-.32	-.09	-.12	-.00	-.04	.08	.31	.18	.14	.27	.38	.53	.71	.83	.92	.98							
32																							
34																							
36																							
38																							
40																							
42																							

Correlation of Atmospheric Density at Pairs of Levels over ST. PAUL ISLAND, Alaska, in JUNE 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.007	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	178	175	175	174	173	171	170	168	167	167	159	152	144	131	85	27	7						
MN	1264	1133	1013	817	658	527	408	298	219	162	120	88.7	65.7	49.5	35.7	26.6	19.6						
SD	16.1	14.5	11.0	8.59	7.62	6.65	12.0	10.5	4.28	2.55	1.42	1.14	0.93	0.72	0.51	0.37	0.31						
CV	1.27	1.28	1.09	1.05	1.16	1.26	2.94	3.52	1.95	1.57	1.18	1.29	1.42	1.48	1.43	1.39	1.58						
1	.60																						
2	.50	.79																					
4	.59	.62	.76																				
6	.64	.59	.61	.86																			
8	.65	.46	.39	.60	.80																		
10	.56	.21	-.05	.09	.20	.51																	
12	.48	.09	-.13	.00	.10	.30	.74																
14	.44	.12	-.11	.00	.12	.24	.69	.95															
16	.25	.00	-.21	-.10	.01	.22	.53	.83	.94														
18	.12	-.09	-.26	-.13	-.04	.17	.39	.69	.84	.96													
20	-.09	-.20	-.32	-.20	-.10	.10	.25	.48	.65	.83	.93												
22	-.17	-.19	-.31	-.21	-.11	.09	.20	.38	.53	.73	.82	.95											
24	-.25	-.19	-.30	-.20	-.14	.03	.14	.28	.42	.62	.72	.88	.96										
26	-.30	-.19	-.36	-.24	-.13	.02	.15	.25	.38	.57	.68	.84	.93	.97									
28	-.39	-.12	-.45	-.36	-.19	-.11	.09	.23	.38	.60	.60	.72	.88	.94	.97								
30	-.56	-.27	-.54	-.59	-.43	-.39	.23	.60	.57	.63	.60	.61	.20	.88	.88	.97							
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Correlation of Atmospheric Density at Pairs of Levels over ST. PAUL ISLAND, Alaska, in SEPTEMBER 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.007	1	2	4	6		10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	178	177	177	175	175	17	173	170	166	161	156	153	147	137	105	65	20	3	1				
MN	1246	1129	1013	315	655	52.	406	299	220	162	120	87.8	64.5	47.2	34.7	25.5	18.9	13.7	10.2				
SD	18.1	19.3	16.7	12.2	9.09	6.38	10.8	12.6	7.73	4.83	2.51	1.52	1.06	0.74	0.51	0.49	0.36						
CV	1.45	1.71	1.65	1.50	1.39	1.22	2.66	4.21	3.51	2.98	2.10	1.73	1.64	1.57	1.47	1.92	1.90						
1	.89																						
2	.77	.89																					
4	.69	.77	.89																				
6	.62	.67	.78	.91																			
8	.49	.47	.46	.57	.72																		
10	.28	.17	-.06	-.13	-.10	.35																	
12	.26	.14	-.13	-.22	-.24	.01	.73																
14	.21	.07	-.17	-.26	-.28	-.10	.59	.94															
16	.15	.03	-.20	-.28	-.30	-.15	.54	.87	.96														
18	.12	-.01	-.21	-.30	-.31	-.18	.49	.81	.91	.98													
20	.10	-.01	-.21	-.29	-.30	-.17	.47	.74	.85	.94	.97												
22	.03	-.05	-.23	-.31	-.31	-.18	.46	.66	.76	.87	.91	.96											
24	-.00	-.04	-.20	-.30	-.30	-.15	.48	.59	.67	.77	.80	.86	.94										
26	-.09	-.03	-.16	-.22	-.22	-.05	.44	.51	.57	.68	.68	.74	.84	.93									
28	-.08	-.02	-.12	-.10	-.12	.16	.57	.50	.49	.57	.56	.62	.74	.83	.95								
30	.19	.17	.16	.18	.13	.20	.45	.38	.49	.52	.46	.55	.65	.73	.92	.99							
32																							
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Correlation of Atmospheric Density at Pairs of Levels over ST. PAUL ISLAND, Alaska, in AUGUST 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.007	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	185	184	184	182	180	180	179	178	174	173	169	168	162	155	109	61	10	1	1				
MN	1243	1117	1001	808	652	524	412	307	226	168	123	90.3	66.6	49.1	36.0	26.5	19.5	14.6	10.8				
SD	12.9	16.3	13.7	10.4	7.86	5.96	9.62	12.9	6.97	4.38	2.30	1.35	0.85	0.59	0.39	0.38	0.29						
CV	1.04	1.46	1.37	1.29	1.21	1.14	2.33	4.20	3.08	2.61	1.87	1.50	1.28	1.20	1.08	1.43	1.49						
1	.57																						
2	.49	.86																					
4	.50	.73	.84																				
6	.51	.65	.72	.89																			
8	.59	.49	.48	.61	.81																		
10	.47	-.02	-.17	-.15	-.06	.33																	
12	.34	-.26	-.41	-.39	-.36	-.06	.72																
14	.21	-.41	-.55	-.53	-.48	-.20	.55	.91															
16	.11	-.45	-.59	-.60	-.56	-.28	.44	.80	.96														
18	.05	-.45	-.59	-.62	-.58	-.30	.35	.71	.90	.98													
20	-.00	-.45	-.58	-.61	-.57	-.32	.28	.64	.83	.92	.96												
22	-.09	-.43	-.54	-.57	-.52	-.29	.23	.52	.71	.82	.87	.94											
24	-.09	-.34	-.42	-.42	-.35	-.15	.20	.38	.52	.62	.68	.78	.92										
26	-.10	-.30	-.32	-.30	-.23	-.01	.24	.29	.39	.48	.49	.59	.78	.93									
28	-.18	-.33	-.33	-.29	-.20	-.01	.13	.13	.20	.28	.29	.36	.59	.77	.88								
30	.07	-.06	-.32	-.12	-.28	.07	.05	.48	.51	.56	.56	.57	.65	.77	.84	.98							
32																							
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Correlation of Atmospheric Density at Pairs of Levels over ST. PAUL ISLAND, Alaska, in JULY 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.007	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	186	186	185	183	182	181	181	180	177	176	171	169	165	154	99	47	21	1	1	2			
MN	1252	1117	1001	810	654	525	412	307	226	167	123	90.4	66.9	49.4	36.2	26.8	20.0	14.7	10.9				
SD	14.0	11.8	9.84	7.45	6.16	5.37	11.6	15.0	7.66	4.53	2.37	1.30	0.84	0.61	0.43	0.34	0.17						
CV	1.12	1.06	0.98	0.92	0.94	1.02	1.82	4.89	3.39	2.71	1.93	1.44	1.26	1.23	1.19	1.27	0.85						
1	.29																						
2	.20	.80																					
4	.29	.65	.80																				
6	.34	.49	.58	.83																			
8	.50	.13	.19	.45	.68																		
10	.53	-.29	-.42	-.28	-.08	.44																	
12	.46	-.40	-.51	-.42	-.29	.19	.81																
14	.39	-.45	-.54	-.47	-.31	.14	.74	.93															
16	.30	-.47	-.56	-.51	-.34	.06	.66	.85	.97														
18	.22	-.45	-.53	-.48	-.32	.01	.57	.77	.92	.98													
20	.15	-.39	-.48	-.45	-.28	.01	.48	.67	.84	.93	.97												
22	-.02	-.39	-.37	-.38	-.22	-.10	.26	.45	0.65	.77	.85	.93											
24	-.10	-.16	-.22	-.26	-.13	-.13	.11	.29	.48	.62	.71	.81	.95										
26	-.11	-.01	-.08	-.16	-.02	-.15	-.03	.15	.36	.51	.61	.72	.88	.95									
28	-.01	.24	.13	.05	.01	-.32	-.20	-.08	.10	.30	.40	.49	.71	.83	.93								
30	-.16	.23	.22	-.09	-.10	-.45	-.28	-.13	.15	.40	.49	.57	.76	.85	.89	.96							
32																							
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Correlation of Atmospheric Density at Pairs of Levels over ST. PAUL ISLAND, Alaska, in OCTOBER 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.007	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	186	185	194	184	184	18[illegible]	181	18[illegible]	179	176	172	170	153	136	126	85	24	4	1				
MN	1255	1138	1022	822	658	520	397	291	214	157	116	85.5	63.0	46.3	34.[illegible]	25.0	18.6	13.3	9.80				
SD	22.2	22.2	20.2	13.9	10.2	10.2	16.1	13.6	8.51	5.24	3.02	2.03	1.22	0.82	0.6[illegible]	0.49	0.39	0.09					
CV	1.77	1.95	1.98	1.69	1.55	1.96	4.06	4.67	3.98	3.34	2.60	2.37	1.94	1.77	1.79	1.96	2.10	0.68					
1	.93																						
2	.83	.90																					
4	.73	.77	.87																				
6	.68	.64	.59	.86																			
8	.53	.43	.34	.40	.65																		
10	.39	.27	.07	.03	.22	.73																	
12	.33	.18	-.03	-.05	.13	.54	.69																
14	.27	.11	-.07	-.10	.04	.4[illegible]	.76	.95															
16	.27	.16	-.02	-.05	.07	.3[illegible]	.64	.86	.96														
18	.27	.17	.02	.00	.12	.3[illegible]	.58	.79	.91	.97													
20	.22	.13	.01	.03	.13	.26	.45	.67	.81	.89	.96												
22	.08	.00	-.10	-.06	.07	.20	.35	.57	.71	.80	.87	.95											
24	-.03	-.12	-.18	-.12	.04	.15	.29	.50	.62	.71	.78	.85	.93										
26	-.06	-.12	-.17	-.13	.02	.11	.25	.45	.54	.59	.63	.69	.79	.92									
28	-.31	-.32	-.29	-.22	-.14	-.05	.05	.23	.31	.34	.34	.40	.53	.68	.90								
30	-.23	-.28	-.30	-.17	.09	-.14	-.13	.00	.07	.11	.12	.19	.21	.56	.82	.97							
32	.32	.48	.47	-.18	.33	-.84	-.58	.37	.29	-.45	-.43	-.73	-.43	-.73	-.60	.52	.91						
34																							
36																							
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Correlation of Atmospheric Density at Pairs of Levels over ST. PAUL ISLAND, Alaska, in NOVEMBER 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.007	1	2	4	6	8	10	12	14	16	13	20	22	24	26	28	30	32	34	36	38	40	42
NO	179	178	173	178	176	[illegible]	174	172	172	168	162	157	143	137	129	94	37	2					
MN	1263	1146	1031	828	660	517	386	280	206	152	113	83.0	61.3	45.2	33.4	24.7	18.6	13.6					
SD	29.4	27.2	23.7	17.0	12.4	[illegible]	15.1	9.52	5.85	3.61	2.48	1.84	1.24	0.83	0.63	0.51	0.29						
CV	2.33	2.37	2.30	2.05	1.88	[illegible]	3.91	3.40	2.84	2.38	2.19	2.22	2.02	1.84	1.89	2.06	1.56						
1	.97																						
2	.93	.96																					
4	.78	.82	.90																				
6	.70	.72	.76	.88																			
8	.62	.61	.53	.42	.58																		
10	.36	.32	.16	-.07	-.01	[illegible]																	
12	.33	.27	.10	-.10	-.05	[illegible]	.90																
14	.25	.19	.03	-.14	-.10	[illegible]	.31	.96															
16	.15	.10	-.05	-.21	-.17	.30	.72	.88	.96														
18	.06	.01	-.13	-.27	-.26	.21	.64	.81	.90	.94													
20	-.01	-.04	-.15	-.26	-.29	[illegible]	.54	.70	.79	.84	.94												
22	-.01	-.01	-.09	-.16	-.21	[illegible]	.48	.60	.69	.73	.84	.94											
24	-.08	-.08	-.13	-.21	-.25	[illegible]	.44	.54	.61	.65	.77	.89	.94										
26	-.05	-.06	-.12	-.22	-.27	[illegible]	.39	.46	.50	.51	.61	.71	.74	.87									
28	-.03	-.03	-.11	-.22	-.28	[illegible]	.28	.30	.30	.28	.34	.43	.45	.59	.89								
30	.22	.21	.15	.07	.00	[illegible]	.04	.06	.04	-.03	.02	.12	.14	.20	.65	.93							
32																							
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Correlation of Atmospheric Density at Pairs of Levels over ST. PAUL ISLAND, Alaska, in DECEMBER 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.007	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	186	184	184	183	183	182	180	179	176	171	169	166	150	143	135	99	41	5	1				
MN	1277	1155	1036	830	640	516	395	278	204	150	111	81.8	60.3	44.6	33.1	24.7	18.6	13.4	9.80				
SD	26.0	23.7	19.6	13.6	10.2	10.4	14.1	8.29	4.81	3.36	2.37	1.87	1.30	0.86	0.63	0.52	0.49	0.31					
CV	2.04	2.05	1.89	1.64	1.55	2.02	3.66	2.98	2.36	2.04	2.14	2.29	2.16	1.93	1.90	2.11	2.63	2.31					
1	.96																						
2	.85	.91																					
4	.61	.64	.80																				
6	.50	.50	.59	.80																			
8	.45	.38	.32	.22	.46																		
10	.17	.10	-.02	-.25	-.14	.70																	
12	.08	.03	-.06	-.31	-.25	.50	.90																
14	-.03	-.07	-.11	-.33	-.28	.40	.77	.91															
16	-.09	-.12	-.13	-.33	-.31	.26	.60	.76	.93														
18	-.16	-.17	-.16	-.32	-.33	.11	.45	.61	.83	.93													
20	-.16	-.16	-.14	-.31	-.36	.02	.35	.49	.70	.80	.94												
22	-.14	-.14	-.12	-.29	-.32	.00	.33	.44	.64	.74	.88	.95											
24	-.13	-.12	-.09	-.28	-.30	-.04	.26	.36	.56	.65	.78	.87	.91										
26	-.04	-.03	.05	-.09	-.13	.03	.13	.16	.27	.31	.42	.54	.57	.80									
28	-.05	-.04	.10	.04	-.00	.02	-.05	-.10	-.05	-.08	-.01	.09	.04	.34	.81								
30	-.14	-.07	.06	.11	.07	-.08	-.25	-.30	-.32	-.41	-.41	-.28	-.37	-.06	.50	.92							
32	-.55	-.54	-.32	-.64	-.55	.92	.36	.11	.19	.06	.16	.43	.76	.93	.81	.91	.99						
34																							
36																							
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40																							
42																							

Correlation of Atmospheric Density at Pairs of Levels over BITBURG, Germany, in JANUARY 1958-1959

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.369	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	124	124	124	124	124	124	124	123	122	120	117	112	101	97	90	73	63	42	21	17	3	1	
MN	1230	1145	1028	829	667	529	408	303	218	159	117	84.6	61.5	44.6	32.4	23.8	17.6	12.7	9.43	7.00	5.40	3.90	
SD	23.8	18.0	15.8	12.2	8.19	8.86	17.1	17.7	9.19	5.46	3.61	2.71	2.11	1.68	1.38	0.94	0.83	0.68	0.63	0.46			
CV	1.93	1.57	1.54	1.47	1.23	1.67	4.19	5.84	4.22	3.43	3.09	3.20	3.43	3.77	4.26	3.95	4.72	5.35	6.70	6.57			
1	.76																						
2	.50	.86																					
4	.37	.62	.78																				
6	.55	.58	.59	.77																			
8	.57	.21	-.08	-.19	.23																		
10	.38	-.07	-.36	-.57	-.24	.78																	
12	.38	-.05	-.40	-.57	-.25	.69	.95																
14	.37	-.06	-.41	-.55	-.24	.64	.88	.96															
16	.29	-.07	-.43	-.55	-.29	.56	.81	.90	.95														
18	.17	-.11	-.43	-.53	-.31	.47	.69	.78	.85	.94													
20	.08	-.12	-.41	-.52	-.31	.40	.57	.66	.74	.84	.94												
22	.02	-.10	-.35	-.44	-.28	.30	.44	.51	.60	.72	.84	.95											
24	.07	-.07	-.29	-.39	-.23	.30	.39	.44	.55	.67	.77	.87	.93										
26	.21	-.07	-.28	-.37	-.17	.38	.44	.50	.60	.68	.75	.80	.81	.91									
28	.34	-.01	-.23	-.31	-.15	.40	.47	.53	.61	.64	.63	.62	.56	.68	.90								
30	.61	.09	-.15	-.25	.05	.50	.54	.58	.61	.57	.48	.42	.32	.43	.67	.87							
32	.69	.16	.01	-.01	.43	.43	.42	.43	.47	.43	.29	.20	.06	.21	.49	.74	.95						
34	.68	.14	-.01	.06	.47	.61	.51	.51	.59	.52	.38	.18	.02	.25	.40	.58	.88	.97					
36	.60	-.17	-.28	-.25	.29	.60	.54	.54	.62	.52	.32	.16	.01	.20	.30	.43	.81	.91	.96				
38																							
40																							
42																							

Correlation of Atmospheric Density at Pairs of Levels over BITBURG, Germany, in FEBRUARY 1958-1959

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.369	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	112	112	112	112	112	112	112	112	112	104	97	94	85	84	79	67	61	44	26	15	5	2	
MN	1234	1145	1027	829	670	536	420	312	224	163	120	86.3	62.7	45.3	32.8	23.8	17.5	12.8	9.40	6.80	5.20	4.00	
SD	28.3	21.3	17.0	12.1	9.38	8.15	10.2	14.4	7.37	4.50	3.14	2.25	1.55	1.55	1.54	1.27	1.03	0.79	0.51	0.30	0.12		
CV	2.29	1.83	1.66	1.46	1.40	1.52	2.43	4.62	3.29	2.76	2.62	2.61	2.47	3.42	4.70	5.34	6.17	6.17	5.43	4.41	2.31		
1	.81																						
2	.65	.87																					
4	.66	.65	.70																				
6	.59	.37	.34	.80																			
8	.42	.06	-.07	.34	.74																		
10	.16	-.16	-.34	-.19	.17	.69																	
12	.12	-.10	-.22	-.20	.04	.45	.87																
14	.29	.05	-.12	-.02	.23	.59	.86	.95															
16	.25	-.01	-.18	-.02	.27	.63	.84	.86	.94														
18	.28	.01	-.14	.00	.32	.66	.80	.79	.89	.95													
20	.33	.05	-.06	.14	.45	.67	.74	.69	.79	.88	.95												
22	.37	.07	.01	.26	.51	.69	.62	.52	.62	.73	.83	.92											
24	.32	.01	.11	.38	.57	.64	.38	.28	.36	.43	.51	.68	.84										
26	.31	.00	.12	.42	.59	.65	.33	.20	.28	.34	.40	.58	.76	.95									
28	.27	-.02	.17	.35	.51	.51	.21	.10	.15	.20	.23	.43	.64	.91	.97								
30	.23	-.01	.15	.38	.52	.52	.20	.08	.10	.15	.18	.38	.60	.87	.94	.96							
32	.23	-.09	.10	.36	.50	.57	.24	.08	.16	.24	.23	.38	.55	.85	.91	.94	.98						
34	.29	-.10	-.08	.38	.48	.55	.29	.19	.29	.32	.26	.37	.45	.75	.84	.86	.95	.99					
36	.35	.13	.06	.05	.30	.37	.46	.53	.55	.54	.60	.71	.74	.83	.83	.83	.93	.95	.98				
38	-.92	-.93	-.94	-.85	-.21	.13	.31	.37	.09	.11	.11	.15	.12	.06	.10	.12	.23	.26	.35	.70			
40																							
42																							

Correlation of Atmospheric Density at Pairs of Levels over BITBURG, Germany, in MARCH 1958-1959

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.369	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	124	123	123	123	122	122	122	122	121	120	114	113	107	103	97	84	74	55	35	23	13	5	
MN	1217	1140	1026	829	667	530	410	298	218	161	119	86.2	62.8	45.9	33.6	24.5	18.1	13.2	9.60	7.00	5.20	3.90	
SD	24.9	23.5	19.[illegible]	11.9	7.83	6.88	14.9	11.4	6.07	4.22	2.71	2.06	1.54	1.22	0.97	0.71	0.45	0.32	0.26	0.25	0.17	0.12	
CV	2.05	2.06	1.86	1.44	1.17	1.30	3.63	3.83	2.78	2.62	2.28	2.39	2.45	2.66	2.89	2.90	2.49	2.42	2.71	3.57	3.27	3.08	
1	.91																						
2	.79	.90																					
4	.57	.66	.63																				
6	.36	.39	.52	.75																			
8	-.16	-.29	-.40	-.42	-.04																		
10	-.29	-.43	-.60	-.76	-.56	.74																	
12	-.16	-.35	-.52	-.63	-.45	.62	.88																
14	-.28	-.42	-.54	-.60	-.37	.70	.86	.92															
16	-.31	-.43	-.49	-.51	-.29	.56	.75	.80	.96														
18	-.36	-.46	-.51	-.50	-.25	.65	.70	.76	.93	.97													
20	-.45	-.53	-.53	-.47	-.20	.59	.60	.64	.86	.93	.97												
22	-.47	-.55	-.53	-.44	-.16	.57	.55	.59	.81	.89	.94	.97											
24	-.47	-.52	-.50	-.36	-.09	.56	.49	.55	.77	.84	.90	.95	.97										
26	-.42	-.49	-.44	-.32	-.04	.51	.45	.50	.73	.80	.87	.92	.95	.97									
28	-.39	-.44	-.37	-.22	.03	.36	.31	.32	.58	.68	.76	.82	.85	.86	.93								
30	-.24	-.29	-.22	-.10	.06	.25	.22	.26	.51	.60	.65	.71	.72	.74	.83	.92							
32	-.08	-.13	-.10	-.03	.04	.17	.20	.23	.43	.52	.52	.55	.53	.54	.64	.78	.94						
34	-.21	-.20	-.12	-.08	-.97	-.11	.14	.18	.33	.34	.29	.31	.27	.26	.32	.46	.71	.90					
36	-.34	-.27	-.25	-.29	-.29	-.15	.29	.25	.19	.15	.05	.05	-.04	-.08	-.05	.13	.53	.79	.95				
38	-.51	-.41	-.39	-.50	-.17	.32	.35	.02	-.02	-.01	-.14	-.02	-.13	-.14	-.11	.16	.42	.58	.80	.92			
40	-.68	-.35	-.40	-.23	-.15	-.58	-.59	-.49	-.38	.07	-.25	.60	.13	.40	.27	.74	.87	.93	.95	.99	.99		
42																							

Correlation of Atmospheric Density at Pairs of Levels over BITBURG, Germany, in APRIL 1958-1959

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO). Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.369	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	120	120	119	117	117	117	117	117	117	116	115	113	109	106	103	101	89	61	27	17	6	3	1
MN	1201	1129	1020	825	665	530	412	303	221	162	119	86.8	63.3	46.2	33.8	24.6	18.2	13.2	9.60	7.10	5.30	3.90	2.80
SD	23.9	21.7	18.6	12.0	7.20	5.80	12.2	13.0	5.98	3.98	2.21	1.51	1.01	0.74	0.56	0.45	0.35	0.26	0.21	0.19	0.08		
CV	1.99	1.92	1.82	1.45	1.08	1.09	2.96	4.29	2.71	2.46	1.86	1.74	1.60	1.60	1.66	1.83	1.92	1.97	2.19	2.68	1.51		
1	.88																						
2	.80	.93																					
4	.72	.83	.86																				
6	.67	.72	.71	.85																			
8	.15	.11	.06	.08	.33																		
10	-.29	-.39	-.39	-.47	-.35	.58																	
12	-.30	-.38	-.37	-.43	-.31	.39	.86																
14	-.29	-.41	-.42	-.47	-.32	.40	.84	.94															
16	-.27	-.40	-.41	-.44	-.25	.40	.76	.84	.94														
18	-.33	-.48	-.48	-.53	-.33	.36	.73	.77	.89	.95													
20	-.36	-.50	-.49	-.57	-.38	.28	.64	.65	.77	.86	.94												
22	-.41	-.55	-.54	-.61	-.46	.16	.51	.48	.61	.72	.84	.93											
24	-.38	-.53	-.49	-.57	-.40	.14	.45	.42	.56	.68	.82	.92	.94										
26	-.38	-.51	-.47	-.54	-.40	.11	.48	.44	.60	.71	.82	.88	.90	.93									
28	-.41	-.50	-.46	-.53	-.42	.12	.49	.43	.61	.71	.80	.83	.84	.88	.94								
30	-.42	-.48	-.40	-.46	-.38	.07	.46	.46	.61	.71	.76	.77	.77	.81	.88	.96							
32	-.63	-.62	-.55	-.52	-.43	.00	.44	.51	.64	.72	.76	.77	.75	.81	.86	.92	.98						
34	-.66	-.67	-.63	-.52	-.47	.01	.67	.64	.70	.73	.76	.75	.66	.74	.81	.85	.92	.97					
36	-.55	-.60	-.51	-.37	-.42	-.04	.57	.52	.62	.59	.63	.58	.53	.64	.72	.75	.82	.82	.88				
38	-.31	-.16	-.17	.16	-.17	.04	.28	.44	.47	.41	.25	.18	-.03	.21	.24	.41	.39	.38	.46	.81			
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Correlation of Atmospheric Density at Pairs of Levels over BITBURG, Germany, in MAY 1958-1959

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO). Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.369	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	124	124	124	124	124	124	124	123	123	123	121	121	121	119	115	109	94	60	31	24	7	2	2
MN	1182	1111	1036	818	662	533	421	314	227	166	122	89.1	64.9	47.3	34.6	25.3	18.8	13.7	10.1	7.50	5.50	4.20	3.10
SD	17.4	15.1	12.3	7.67	5.47	4.49	7.45	9.84	4.20	2.27	1.34	1.02	0.80	0.60	0.47	0.43	0.32	0.24	0.18	0.17	0.12		
CV	1.47	1.36	1.21	0.94	0.83	0.84	1.77	3.13	1.85	1.37	1.10	1.14	1.23	1.27	1.36	1.70	1.70	1.75	1.78	2.27	2.18		
1	.87																						
2	.66	.82																					
4	.45	.48	.67																				
6	.33	.31	.50	.84																			
8	.11	.07	.16	.43	.70																		
10	-.23	-.26	-.32	-.26	-.07	.47																	
12	-.34	-.37	-.51	-.46	-.36	.01	.69																
14	-.32	-.33	-.45	-.34	-.24	.08	.59	.91															
16	-.32	-.32	-.41	-.20	-.10	.20	.46	.63	.81														
18	-.32	-.34	-.35	-.21	-.14	.10	.27	.36	.51	.75													
20	-.26	-.25	-.22	-.15	-.07	.11	.10	.13	.28	.58	.85												
22	-.23	-.13	-.05	-.09	-.02	.06	-.07	-.11	.02	.30	.66	.86											
24	-.17	-.10	-.02	-.07	-.06	-.02	-.13	-.21	-.12	.18	.51	.72	.89										
26	-.15	-.05	.04	-.01	.00	-.02	-.16	-.26	-.16	.13	.45	.67	.89	.92									
28	-.12	.01	.11	.02	.02	-.05	-.22	-.32	-.21	.07	.34	.57	.81	.87	.95								
30	-.13	-.01	.05	-.05	-.04	-.08	-.21	-.29	-.20	.08	.29	.54	.78	.86	.92	.98							
32	.05	.13	.05	-.12	-.09	-.10	-.23	-.30	-.23	.03	.31	.56	.80	.85	.90	.93	.97						
34	-.01	.17	.05	-.04	-.01	-.15	-.26	-.48	-.46	-.28	-.09	.29	.68	.73	.83	.92	.94	.93					
36	-.13	.08	.15	-.03	-.10	-.29	-.27	-.44	-.46	-.34	-.14	.18	.65	.72	.81	.91	.90	.86	.93				
38	-.55	-.50	-.42	-.66	-.58	-.69	-.59	-.59	-.57	-.53	-.24	.22	.77	.85	.90	.93	.87	.82	.92	.95			
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42																							

Correlation of Atmospheric Density at Pairs of Levels over BITBURG, Germany, in JUNE 1958-1959

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO). Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.369	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	120	120	119	117	117	117	117	117	117	117	115	115	114	113	104	97	78	49	45	33	15	8	4
MN	1172	1104	1002	813	659	531	422	318	230	169	124	90.4	66.2	48.4	35.4	26.1	19.4	14.1	10.4	7.70	5.70	4.30	3.30
SD	17.5	14.9	12.1	8.62	6.10	4.69	7.24	12.6	4.87	2.68	1.53	1.04	0.80	0.56	0.36	0.30	0.25	0.25	0.18	0.16	0.13	0.08	0.07
CV	1.49	1.35	1.21	1.06	0.93	0.88	1.72	3.96	2.12	1.59	1.23	1.15	1.21	1.16	1.02	1.15	1.29	1.77	1.73	2.08	2.28	1.86	2.12
1	.87																						
2	.74	.89																					
4	.57	.66	.79																				
6	.43	.47	.61	.83																			
8	.31	.31	.38	.58	.76																		
10	-.20	-.24	-.27	-.29	-.19	.29																	
12	-.21	-.27	-.32	-.32	-.16	.22	.85																
14	-.18	-.24	-.29	-.35	-.17	.22	.83	.94															
16	-.25	-.30	-.38	-.44	-.29	.11	.76	.84	.92														
18	-.30	-.33	-.40	-.48	-.31	-.03	.50	.54	.64	.80													
20	-.32	-.30	-.37	-.45	-.41	-.22	.31	.34	.41	.63	.85												
22	-.29	-.25	-.35	-.45	-.45	-.25	.25	.31	.35	.59	.76	.90											
24	-.23	-.15	-.26	-.40	-.44	-.27	.20	.25	.25	.47	.59	.77	.90										
26	-.25	-.12	-.18	-.32	-.44	-.44	-.07	-.04	-.04	.20	.36	.59	.74	.83									
28	-.30	-.19	-.26	-.39	-.50	-.44	-.05	-.01	-.04	.21	.34	.54	.69	.75	.91								
30	-.46	-.31	-.32	-.39	-.44	-.48	-.13	-.01	-.06	.13	.29	.48	.61	.65	.76	.89							
32	-.35	-.22	-.15	-.11	-.18	-.27	-.04	.12	-.01	.04	.11	.36	.53	.63	.59	.62	.90						
34	-.31	-.08	-.10	-.12	-.30	-.29	-.09	-.05	-.14	-.03	-.07	.24	.57	.74	.50	.87	.80	.60					
36	-.30	-.01	.04	-.13	-.38	-.49	-.28	-.30	-.38	-.30	-.41	-.02	.43	.70	.50	.86	.77	.54	.93				
38	-.21	.16	.12	-.11	-.43	-.50	-.27	-.38	-.49	-.39	-.60	-.07	.51	.63	.77	.85	.77	.50	.89	.94			
40	.10	-.06	-.42	-.38	-.55	-.71	-.76	-.61	-.83	-.78	-.83	-.41	.10	.42	.72	.73	.66	.62	.90	.81	.90		
42	.71	.53	.20	.58	-.51	-.64	-.92	-.47	-.84	-.95	-.89	-.92	-.78	-.13	.04	.11	-.10	.20	.74	.57	.75	.99	

Correlation of Atmospheric Density at Pairs of Levels over BITBURG, Germany, in JULY 1958-1959

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.369	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	124	124	124	123	123	123	123	123	123	123	123	122	121	117	109	98	79	47	46	27	20	8	3
MN	1158	1092	992	808	656	529	422	322	235	174	126	92.1	67.5	49.5	36.1	26.7	19.8	14.4	10.7	8.00	5.90	4.40	3.40
SD	16.9	14.3	10.7	5.92	4.37	3.82	6.42	11.9	7.20	3.96	2.18	1.12	0.76	0.59	0.39	0.26	0.19	0.17	0.15	0.12	0.09	0.08	
CV	1.46	1.31	1.08	0.73	0.67	0.72	1.52	3.70	3.06	2.28	1.73	1.22	1.13	1.19	1.08	0.97	0.96	1.18	1.40	1.50	1.53	1.82	
1	.87																						
2	.72	.88																					
4	.40	.45	.56																				
6	.21	.18	.29	.73																			
8	-.03	-.11	-.06	.35	.65																		
10	-.25	-.32	-.34	-.26	-.07	.39																	
12	-.27	-.33	-.44	-.49	-.38	.04	.79																
14	-.27	-.32	-.47	-.55	-.42	.03	.68	.86															
16	-.28	-.35	-.46	-.52	-.32	.18	.75	.82	.93														
18	-.32	-.37	-.47	-.48	-.25	.22	.71	.72	.85	.95													
20	-.30	-.33	-.42	-.43	-.17	.24	.63	.59	.74	.85	.93												
22	-.33	-.31	-.34	-.39	-.16	.20	.58	.49	.63	.79	.85	.90											
24	-.34	-.25	-.24	-.32	-.16	.08	.48	.42	.51	.68	.73	.76	.91										
26	-.25	-.17	-.16	-.28	-.23	-.06	.39	.38	.41	.57	.58	.60	.76	.89									
28	-.27	-.10	-.07	-.18	-.23	-.08	.23	.26	.26	.41	.44	.47	.64	.80	.91								
30	-.33	-.11	-.04	-.10	-.17	-.11	.09	.13	.11	.26	.29	.30	.51	.71	.81	.93							
32	-.41	-.18	-.10	-.05	-.35	-.24	-.04	-.02	.00	.09	.13	.07	.26	.51	.68	.77	.90						
34	-.63	-.43	-.36	-.20	-.29	-.13	.06	.14	.13	.15	.15	.15	.25	.41	.46	.65	.79	.76					
36	-.72	-.53	-.44	-.28	-.29	-.12	.14	.24	.25	.23	.23	.25	.35	.48	.49	.66	.78	.66	.96				
38	-.61	-.32	-.18	-.03	-.19	-.06	.18	.22	.23	.24	.29	.25	.35	.40	.47	.66	.76	.70	.95	.97			
40	-.49	-.35	-.23	.11	-.12	-.27	.29	-.01	.12	.24	.34	.34	.22	.22	.38	.58	.67	.60	.92	.95	.98		
42																							

Correlation of Atmospheric Density at Pairs of Levels over BITBURG, Germany, in AUGUST 1958-1959

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.369	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	125	124	124	124	123	123	123	123	123	122	119	117	115	111	107	95	67	43	39	28	10	2	
MN	1163	1095	993	808	656	529	422	322	236	174	126	92.0	67.4	49.4	36.[illegible]	26.6	19.7	14.3	10.6	7.90	5.80	4.30	
SD	16.7	15.0	13.9	6.45	4.59	3.68	4.81	11.3	8.21	4.26	1.91	0.93	1.51	0.62	0.33	0.28	0.20	0.17	0.18	0.13	0.10		
CV	1.44	1.37	1.40	0.80	0.70	0.70	1.14	3.51	3.48	2.45	1.52	1.01	2.24	1.26	0.9[illegible]	1.05	1.02	1.19	1.70	1.65	1.72		
1	.87																						
2	.80	.94																					
4	.58	.65	.76																				
6	.41	.41	.47	.73																			
8	.26	.26	.29	.51	.78																		
10	-.23	-.27	-.27	-.26	-.11	.18																	
12	-.35	-.39	-.47	-.57	-.38	-.21	.71																
14	-.27	-.29	-.45	-.54	-.34	-.16	.54	.85															
16	-.30	-.32	-.43	-.49	-.29	-.11	.58	.85	.96														
18	-.28	-.30	-.38	-.36	-.21	-.03	.57	.78	.87	.94													
20	-.30	-.30	-.35	-.34	-.23	-.06	.53	.68	.74	.84	.89												
22	-.13	-.14	-.20	-.16	-.12	-.01	.13	.23	.30	.31	.32	.37											
24	-.24	-.18	-.19	-.17	-.20	-.06	.19	.28	.35	.42	.49	.57	.86										
26	-.37	-.28	-.21	-.14	-.18	-.04	.18	.18	.17	.32	.43	.54	.16	.56									
28	-.41	-.27	-.19	-.08	-.14	-.05	.03	.06	.04	.17	.25	.35	.48	.67	.88								
30	-.40	-.24	-.18	-.11	-.22	-.13	-.04	-.04	-.01	.09	.17	.33	.45	.65	.78	.92							
32	-.32	-.12	-.08	-.12	-.22	-.08	-.04	-.04	.05	.13	.21	.28	.46	.63	.59	.64	.86						
34	-.16	.14	.14	.09	-.18	-.10	-.03	-.06	-.02	.01	.07	.15	.37	.50	.46	.57	.71	.75					
36	-.29	-.07	-.04	.05	-.30	-.20	.19	.08	.02	.00	.09	.16	.35	.54	.49	.52	.62	.67	.94				
38	.04	.65	.06	.14	-.24	-.53	.02	.18	.11	.23	.36	.20	.66	.65	.42	.25	.39	.56	.81	.91			
40																							
42																							

Correlation of Atmospheric Density at Pairs of Levels over BITBURG, Germany, in SEPTEMBER 1958

First five lines indicate level(KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.369	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	59	59	59	59	59	59	59	59	59	59	58	58	57	57	53	52	45	31	21	14	4		
MN	1173	1102	996	809	656	530	422	326	238	174	126	91.8	66.9	46.5	35.3	25.8	19.1	13.8	10.1	7.40	5.40		
SD	17.0	14.0	13.0	6.58	5.41	4.45	5.43	8.98	6.23	3.18	1.62	1.13	0.83	0.44	0.38	0.33	0.24	0.16	0.16	0.16	0.14		
CV	1.45	1.27	1.31	0.81	0.82	0.84	1.29	2.75	2.62	1.33	1.29	1.23	1.24	1.12	1.08	1.28	1.26	1.16	1.58	2.16	2.59		
1	.78																						
2	.60	.86																					
4	.33	.46	.64																				
6	.20	.29	.44	.80																			
8	.03	-.03	.06	.43	.71																		
10	-.24	-.41	-.51	-.41	-.26	.27																	
12	-.24	-.43	-.65	-.66	-.58	-.15	.74																
14	-.18	-.42	-.65	-.57	-.48	.01	.74	.89															
16	-.22	-.46	-.61	-.52	-.41	.13	.77	.80	.93														
18	-.29	-.49	-.58	-.46	-.31	.16	.74	.66	.80	.91													
20	-.35	-.43	-.44	-.31	-.13	.29	.65	.41	.57	.78	.87												
22	-.39	-.47	-.41	-.31	-.17	.31	.57	.34	.48	.73	.81	.92											
24	-.45	-.49	-.38	-.29	-.18	.26	.49	.27	.39	.63	.73	.84	.92										
26	-.49	-.46	-.35	-.40	-.30	.13	.38	.24	.31	.54	.67	.79	.86	.93									
28	-.60	-.51	-.40	-.44	-.34	.11	.36	.25	.30	.49	.58	.68	.79	.90	.91								
30	-.58	-.47	-.39	-.55	-.42	-.02	.31	.27	.30	.45	.52	.60	.74	.87	.88	.96							
32	-.37	-.29	-.25	-.47	-.30	.05	.24	.18	.26	.41	.48	.52	.70	.80	.80	.83	.93						
34	-.34	-.18	-.11	-.44	-.27	.03	-.01	-.11	.06	.19	.23	.34	.59	.64	.65	.75	.85	.94					
36	-.02	14	-.00	-.47	-.49	.03	.13	-.11	.21	.22	.16	.19	.41	.46	.43	.59	.74	.80	.81				
38	-.31	-.19	-.12	.02	-.66	-.88	-.69	-.89	-.66	.17	.50	.26	.64	.79	.78	.91	.90	.90	.92	.96			
40																							
42																							

Correlation of Atmospheric Density at Pairs of Levels over BITBURG, Germany, in OCTOBER 1958

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO). Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.369	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	62	61	61	61	61	61	61	61	61	61	61	61	60	57	55	49	41	32	12	5			
MN	1200	1121	1010	819	622	531	419	317	233	170	124	90.0	65.4	47.4	34.5	25.0	18.5	13.4	9.90	7.20			
SD	20.7	14.7	13.6	11.1	7.59	6.00	9.14	11.8	7.83	4.78	2.34	1.33	0.77	0.53	0.39	0.37	0.31	0.22	0.18	0.08			
CV	1.73	1.31	1.35	1.36	1.15	1.13	2.18	3.72	3.36	2.81	1.89	1.48	1.18	1.12	1.13	1.48	1.68	1.64	1.82	1.11			
1	.72																						
2	.55	.89																					
4	.62	.74	.76																				
6	.06	.62	.54	.81																			
8	.60	.41	.26	.51	.74																		
10	.27	-.03	-.25	-.16	-.03	.50																	
12	.17	-.17	-.37	-.28	-.18	.28	.86																
14	.13	-.14	-.36	-.31	-.20	.25	.80	.94															
16	-.03	-.26	-.46	-.45	-.35	.09	.71	.89	.96														
18	-.09	-.33	-.52	-.51	-.40	.07	.70	.87	.93	.96													
20	-.20	-.41	-.58	-.57	-.46	-.02	.58	.76	.83	.90	.92												
22	-.41	-.44	-.50	-.53	-.41	-.07	.30	.42	.51	.64	.67	.77											
24	-.39	-.36	-.42	-.49	-.41	-.11	.22	.37	.44	.55	.58	.73	.87										
26	-.46	-.22	-.25	-.31	-.33	-.13	.18	.24	.28	.37	.38	.54	.73	.76									
28	-.40	-.03	.00	-.14	-.29	-.19	-.03	-.04	-.01	.11	.09	.29	.53	.68	.85								
30	-.39	.02	.10	-.08	-.28	-.27	-.06	-.06	-.05	.07	.09	.21	.49	.64	.78	.91							
32	-.38	.05	.14	-.03	0.32	-.19	.07	.02	.03	.15	.14	.25	.46	.57	.71	.88	.97						
34	-.44	.20	.17	-.06	-.34	-.27	.02	-.08	-.01	.09	.05	.18	.28	.44	.72	.83	.89	.97					
36	-.26	.02	-.21	-.50	-.38	-.07	.24	-.02	-.04	.14	.35	.60	.31	.77	.64	.94	.93	.90	.91				
38																							
40																							
42																							

Correlation of Atmospheric Density at Pairs of Levels over BITBURG, Germany, in NOVEMBER 1958

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO). Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.369	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	60	60	60	60	60	60	60	60	60	60	59	59	57	57	51	42	38	28	14	4			
MN	1221	1140	1016	822	666	535	420	312	227	166	122	88.7	64.5	46.6	33.6	24.2	17.4	12.5	9.10	6.60			
SD	16.5	14.2	11.7	7.90	6.79	6.24	9.24	11.3	5.38	3.51	1.95	1.17	0.79	0.69	0.67	0.53	0.56	0.43	0.27	0.01			
CV	1.35	1.25	1.15	0.96	1.02	1.17	2.20	0.36	2.37	2.11	1.60	1.32	1.22	1.48	1.99	2.19	3.22	3.44	2.97	0.15			
1	.61																						
2	-.23	.18																					
4	.03	.30	.68																				
6	.21	.34	.44	.86																			
8	.46	.30	-.05	.41	.73																		
10	.69	.30	-.43	-.29	.06	.60																	
12	.74	.34	-.54	-.38	-.11	.37	.86																
14	.58	.22	-.42	-.25	.03	.50	.82	.90															
16	.31	.10	-.23	-.12	.13	.48	.67	.65	.88														
18	.27	.11	-.15	.01	.26	.58	.62	.56	.82	.96													
20	-.01	.02	-.01	.11	.31	.47	.39	.28	.58	.83	.90												
22	-.30	-.14	.10	.14	.24	[illegible]	.12	-.01	.27	.59	.67	.85											
24	-.54	-.33	.24	.10	.08	-.04	-.19	-.27	-.08	.20	.28	.53	.77										
26	-.73	-.41	.40	.10	.01	-.26	-.41	-.53	-.34	.04	.08	.39	.65	.91									
28	-.78	-.38	.53	.16	.02	-.34	-.53	-.66	-.49	-.07	-.02	.30	.55	.81	.93								
30	-.67	-.23	.50	.04	-.16	-.45	-.57	-.63	-.54	-.21	-.17	.08	.36	.66	.81	.89							
32	-.55	-.18	.46	.17	-.04	-.38	-.56	-.65	-.60	-.26	-.21	.07	.32	.70	.78	.80	.95						
34	-.56	-.16	.36	-.02	-.22	-.52	-.48	-.52	-.43	-.10	-.07	.16	.33	.51	.66	.81	.97	.99					
36	-.89	-.93	-.83	-.92	-.60	-.17	.15	-.23	.55	.74	.89	.93	.99	.97	1.00	.97	.99	.98	1.00				
38																							
40																							
42																							

Correlation of Atmospheric Density at Pairs of Levels over BITBURG, Germany, in DECEMBER 1958

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.369	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	62	62	62	62	62	62	62	62	62	61	59	58	54	50	44	37	37	26	14	7	3	2	
MN	1213	1131	1015	818	660	528	410	302	220	161	119	86.1	62.9	45.7	33.1	24.0	17.3	12.6	9.20	6.80	5.10	3.80	
SD	30.7	22.9	17.9	10.6	7.92	6.85	13.8	14.0	7.28	3.91	2.23	1.67	1.23	0.91	0.66	0.48	0.49	0.42	0.28	0.22			
CV	2.53	2.02	1.76	1.30	1.20	1.30	3.37	4.64	3.31	2.43	1.87	1.94	1.96	1.79	1.99	2.00	2.83	3.33	3.04	3.24			
1	.92																						
2	.83	.89																					
4	.69	.77	.80																				
6	.65	.76	.75	.84																			
8	.55	.62	.50	.52	.76																		
10	.59	.58	.44	.26	.32	.55																	
12	.57	.53	.43	.16	.17	.29	.84																
14	.59	.52	.41	.19	.15	.26	.76	.95															
16	.45	.41	.32	.12	.06	.22	.71	.89	.94														
18	.35	.37	.30	.18	.14	.23	.59	.74	.84	.91													
20	.17	.21	.13	.10	.10	.18	.41	.55	.66	.77	.91												
22	.15	.19	.15	.02	.09	.18	.41	.52	.61	.71	.83	.94											
24	.06	.08	.04	-.11	-.04	.12	.31	.40	.52	.62	.74	.86	.92										
26	-.08	-.10	-.13	-.26	-.16	.11	.07	.13	.29	.40	.55	.68	.75	.87									
28	-.22	-.31	-.33	-.44	-.25	.06	-.06	-.02	.09	.19	.27	.36	.44	.53	.79								
30	-.54	-.61	-.60	-.46	-.31	-.18	-.47	-.51	-.42	-.38	-.28	-.14	-.05	.11	.44	.73							
32	-.56	-.67	-.70	-.50	-.34	-.20	-.57	-.61	-.52	-.48	-.37	-.21	-.11	.00	.30	.52	.94						
34	-.69	-.78	-.71	-.56	-.38	-.34	-.64	-.65	-.48	-.39	-.13	.37	.43	.38	.47	.23	.75	.95					
36	-.69	-.70	-.66	-.68	.25	-.16	-.76	-.76	-.71	-.62	.42	.78	.81	.81	.87	.83	.84	.90	.97				
38																							
40																							
42																							

Correlation of Atmospheric Density at Pairs of Level over GREAT FALLS, Mont., in JANUARY 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	1.124	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	186		186	185	182	181	181	181	178	173	157	151	120	94	55	13	3						
MN	1139		1028	829	667	531	411	302	220	161	119	86.2	63.0	46.1	33.9	24.9	18.1						
SD	42.3		31.1	16.4	9.12	6.49	13.5	14.4	7.71	4.20	2.51	1.67	1.01	0.84	0.75	0.43							
CV	3.71		3.03	1.98	1.37	1.22	3.28	4.77	3.50	2.61	2.11	1.94	1.60	1.82	2.21	1.78							
1																							
2	.88																						
4	.74		.85																				
6	.51		.54	.81																			
8	-.17		-.30	-.12	.26																		
10	-.51		-.67	-.70	-.56	.39																	
12	-.51		-.62	-.69	-.56	.20	.86																
14	-.49		-.60	-.64	-.51	.21	.77	.92															
16	-.56		-.64	-.65	-.51	.19	.69	.79	.89														
18	-.59		-.63	-.60	-.47	.15	.56	.65	.79	.92													
20	-.55		-.56	-.55	-.44	.10	.40	.47	.65	.82	.90												
22	-.43		-.42	-.42	-.35	.04	.28	.29	.43	.59	.72	.87											
24	-.17		-.13	-.17	-.21	-.04	.03	.04	.20	.41	.54	.77	.86										
26	-.18		-.13	-.25	-.29	-.21	-.07	.02	.12	.30	.42	.67	.77	.85									
28	-.10		-.12	-.30	-.18	-.18	-.16	.14	.22	.37	.59	.81	.90	.85	.95								
30																							
32																							
34																							
36																							
38																							
40																							
42																							

Correlation of Atmospheric Density at Pairs of Levels over GREAT FALLS, Mont., in FEBRUARY 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO). Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	1.124	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	170		169	169	169	169	169	169	167	161	152	148	129	120	76	42	21	14	6				
MN	1150		1033	830	667	531	409	298	217	159	118	86.0	62.8	46.0	33.5	24.6	18.0	13.1	9.50				
SD	44.4		31.6	16.2	9.69	5.99	12.0	13.0	5.96	4.15	2.54	1.53	0.92	0.63	1.14	0.50	0.26	0.14	0.13				
CV	3.86		3.06	1.95	1.45	1.13	2.93	4.36	2.75	2.61	2.15	1.78	1.46	1.37	3.40	2.03	1.44	1.07	1.37				
1																							
2	.82																						
4	.59		.76																				
6	.44		.55	.84																			
8	.09		.07	.20	.53																		
10	-.43		-.49	-.63	-.52	.14																	
12	-.51		-.56	-.64	-.56	-.04	.84																
14	-.52		-.58	-.63	-.52	-.01	.81	.95															
16	-.52		-.57	-.63	-.51	.00	.76	.86	.92														
18	-.53		-.57	-.65	-.53	.02	.74	.82	.89	.96													
20	-.49		-.55	-.63	-.50	-.00	.67	.75	.82	.91	.95												
22	-.45		-.51	-.59	-.43	.01	.63	.66	.74	.84	.86	.94											
24	-.22		-.32	-.42	-.24	.07	.49	.48	.57	.69	.72	.80	.86										
26	-.08		-.18	-.27	-.16	.00	.17	.17	.21	.29	.32	.35	.36	.44									
28	.10		-.22	-.34	-.11	.14	.40	.33	.41	.48	.50	.56	.56	.75	.93								
30	.05		-.02	-.15	-.05	.16	.25	.12	.23	.36	.40	.51	.55	.56	.72	.92							
32	-.25		-.34	-.16	.00	.07	.32	.24	.42	.52	.52	.61	.77	.84	.93	.85	.92						
34	-.72		-.84	-.63	-.12	.51	.45	.40	.54	.62	.66	.65	.83	.97	.89	.86	.96	.92					
36																							
38																							
40																							
42																							

Correlation of Atmospheric Density at Pairs of Level over GREAT FALLS, Mont., in MARCH 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	1.124	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	186		186	186	185	185	185	179	175	168	166	160	149	127	97	53	29	15	7				
MN	1128		1025	830	668	532	413	301	218	160	118	85.7	62.6	45.8	33.6	24.5	18.1	13.2	9.70				
SD	42.9		30.5	13.8	8.17	5.05	11.2	12.4	6.26	3.89	2.10	1.42	0.97	0.78	0.76	0.53	0.36	0.25	0.17				
CV	3.80		2.98	1.66	1.22	0.95	2.71	4.12	2.87	2.43	1.78	1.66	1.55	1.70	2.26	2.16	1.99	1.89	1.75				
1																							
2	.88																						
4	.65		.79																				
6	.51		.55	.77																			
8	.07		.01	-.01	.22																		
10	-.36		-.48	-.65	-.64	.26																	
12	-.52		-.62	-.73	-.64	.01	.77																
14	-.52		-.64	-.67	-.51	.07	.69	.93															
16	-.47		-.56	-.55	-.37	.14	.55	.79	.91														
18	-.52		-.57	-.52	-.39	.08	.50	.72	.83	.91													
20	-.47		-.48	-.36	-.32	.04	.38	.57	.65	.75	.90												
22	-.44		-.39	-.24	-.24	-.03	.18	.33	.40	.54	.74	.92											
24	-.43		-.35	-.17	-.17	-.04	.12	.20	.27	.42	.63	.84	.94										
26	-.37		-.28	-.14	-.18	-.04	.09	.14	.19	.34	.54	.77	.85	.93									
28	-.45		-.33	-.22	-.10	.17	.11	.19	.20	.27	.44	.61	.64	.80	.92								
30	-.50		-.44	-.26	-.05	.19	.24	.35	.33	.43	.46	.58	.55	.69	.77	.92							
32	-.19		-.34	-.33	.27	-.01	.09	.29	.22	.22	.14	.17	.11	.31	.45	.67	.96						
34	-.22		-.44	-.30	.38	.71	.00	.29	.31	.40	.32	.44	.58	.75	.69	.84	.94	.97					
36																							
38																							
40																							
42																							

Correlation of Atmospheric Density at Pairs of Levels over GREAT FALLS, Mont., in APRIL 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO). Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	1.124	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NC	180		179	178	178	178	176	175	173	168	165	163	158	147	114	92	51	16	3	1			
MN	1102		1011	824	665	532	415	306	222	163	120	87.1	63.4	46.4	34.1	25.0	18.5	13.4	9.90	7.40			
SD	29.3		21.4	12.9	8.63	5.08	8.95	12.1	5.83	3.77	2.00	1.18	0.78	0.49	0.40	0.32	0.25	0.16					
CV	2.66		2.12	1.57	1.30	0.95	2.16	3.95	2.63	2.31	1.67	1.35	1.23	1.06	1.17	1.28	1.35	1.19					
1																							
2	.89																						
4	.64		.80																				
6	.47		.58	.86																			
8	.22		.22	.38	.59																		
10	-.34		-.46	-.58	-.59	-.04																	
12	-.45		-.56	-.57	-.54	-.17	.74																
14	-.46		-.55	-.53	-.47	-.16	.65	.91															
16	-.41		-.49	-.48	-.44	-.28	.47	.73	.85														
18	-.34		-.37	-.35	-.35	-.35	.30	.62	.74	.87													
20	-.25		-.24	-.20	-.20	-.32	.15	.46	.59	.77	.87												
22	-.16		-.11	-.04	-.02	-.28	-.03	.26	.39	.55	.71	.87											
24	-.19		-.11	-.07	-.06	-.27	.01	.26	.36	.53	.65	.81	.90										
26	-.25		-.11	-.10	.00	-.13	-.06	.11	.18	.35	.50	.62	.72	.86									
28	-.32		-.17	.07	.14	.08	-.05	.10	.10	.21	.35	.41	.57	.66	.39								
30	-.29		-.08	.14	.11	.07	-.11	.03	-.06	.01	.18	.21	.40	.48	.74	.95							
32	.12		.38	-.03	.17	.20	.10	.13	.24	.15	.23	.08	.06	.08	.45	.81	.95						
34																							
36																							
38																							
40																							
42																							

Correlation of Atmospheric Density at Pairs of Level over GREAT FALLS, Mont., in MAY 1958- 1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	1.124	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	186		186	186	185	185	184	134	182	179	177	172	167	152	132	106	64	14	5	4			
MN	1079		991	814	660	531	419	315	229	168	123	89.4	65.1	47.5	34.9	25.6	18.9	13.7	10.1	7.50			
SD	31.1		21.8	11.9	7.11	5.34	9.03	13.3	7.83	4.28	2.35	1.61	1.11	0.72	0.44	0.35	0.25	0.13	0.16	0.14			
CV	2.88		2.20	1.46	1.08	1.01	2.16	4.22	3.42	2.55	1.91	1.80	1.71	1.52	1.26	1.37	1.32	0.95	1.58	1.87			
1																							
2	.86																						
4	.63		.85																				
6	.45		.63	.83																			
8	.14		.16	.23	.54																		
10	-.33		-.49	-.54	-.42	.28																	
12	-.53		-.71	-.74	-.57	.05	.81																
14	-.49		-.67	-.69	-.48	.10	.71	.92															
16	-.52		-.66	-.65	-.46	.10	.62	.84	.93														
18	-.46		-.57	-.59	-.42	.08	.54	.74	.83	.92													
20	-.38		-.43	-.43	-.25	.16	.41	.57	.66	.80	.89												
22	-.36		-.33	-.31	-.12	.17	.27	.38	.48	.64	.73	.91											
24	-.36		-.29	-.23	-.08	.18	.20	.28	.37	.54	.60	.81	.94										
26	-.36		-.23	-.16	-.04	.19	.14	.16	.24	.42	.47	.67	.84	.93									
28	-.39		-.25	-.19	-.04	.23	.11	.12	.20	.37	.39	.53	.66	.77	.90								
30	-.44		-.33	-.23	-.09	.23	.39	.30	.34	.48	.45	.51	.60	.68	.78	.95							
32	-.08		-.17	-.33	-.28	.32	.43	.27	.44	.53	.60	.66	.76	.62	.69	.76	.94						
34	-.40		-.53	-.36	-.55	.22	.51	.34	.45	.59	.63	.79	.88	.78	.88	.93	.94	.91					
36	-.33		-.41	-.02	-.12	-.30	-.38	-.25	.13	.27	.37	.64	.76	.64	.77	.83	.88	.86	.98				
38																							
40																							
42																							

Correlation of Atmospheric Density at Pairs of Levels over GREAT FALLS, Mont., in JUNE 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO). Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	1.124	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	180		180	179	177	177	176	175	172	17[illegible]	170	165	159	151	117	82	26	2	1				
MN	1063		979	805	654	528	421	322	235	173	126	91.5	66.7	48.6	35.5	26.1	19.4	14.1	10.8				
SD	25.3		16.3	8.32	5.16	4.40	5.13	9.20	6.01	3.59	1.79	1.02	0.72	0.56	0.36	0.30	0.22						
CV	2.38		1.66	1.03	0.79	0.83	1.22	2.86	2.56	2.09	1.42	0.11	1.08	1.15	1.01	1.15	1.13						
1																							
2	.81																						
4	.50		.76																				
6	.29		.39	.64																			
8	.19		.21	.42	.78																		
10	-.11		-.27	-.32	-.08	.27																	
12	-.35		-.54	-.63	-.45	-.23	.58																
14	-.40		-.58	-.61	-.45	-.24	.36	.79															
16	-.43		-.61	-.56	-.38	-.17	.30	.62	.86														
18	-.37		-.48	-.49	-.35	-.17	.22	.48	.63	.88													
20	-.30		-.34	-.32	-.19	-.01	.21	.32	.53	.76	.86												
22	-.34		-.34	-.25	-.12	.04	.15	.23	.44	.67	74	.89											
24	-.36		-.29	-.21	-.07	.05	.13	.13	.33	.57	65	.79	.94										
26	-.26		-.18	-.14	-.04	.02	.06	-.01	.18	.43	.52	.72	.87	.94									
28	-.28		-.22	-.23	-.09	.02	.12	.04	.28	.49	.55	.70	.83	.88	.93								
30	-.35		-.23	-.09	.06	.24	.35	-.07	.24	.39	.37	.68	.80	.88	.90	.95							
32																							
34																							
36																							
38																							
40																							
42																							

Correlation of Atmospheric Density at Pairs of Levels over GREAT FALLS, Mont., in JULY 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	1.124	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	186		185	184	184	184	184	184	180	174	169	164	159	153	114	85	26	6	2				
MN	1050		966	802	654	530	424	327	241	178	129	93.0	67.8	49.5	36.1	26.6	19.7	14.5	10.8				
SD	29.5		18.5	8.64	4.43	3.36	3.55	8.17	7.09	4.61	2.37	1.12	0.69	0.50	0.31	0.30	0.20	0.10					
CV	2.81		1.92	1.08	0.68	0.63	0.84	2.50	2.94	2.59	1.84	1.20	1.02	1.01	0.86	1.13	1.02	0.69					
1																							
2	.81																						
4	.60		.85																				
6	.29		.46	.67																			
8	.11		.19	.43	.73																		
10	-.21		-.32	-.19	-.05	.31																	
12	-.41		-.63	-.60	-.45	-.16	.61																
14	-.51		-.74	-.73	-.54	-.26	.33	.74															
16	-.51		-.75	-.71	-.46	-.16	.28	.62	.94														
18	-.52		-.71	-.65	-.41	-.12	.27	.57	.86	.91													
20	-.56		-.74	-.68	-.46	-.14	.32	.57	.82	.89	.90												
22	-.59		-.63	-.52	-.35	-.05	.21	.46	.74	.81	.86	.88											
24	-.62		-.62	-.49	-.33	-.06	.12	.39	.67	.73	.79	.80	.93										
26	-.55		-.51	-.42	-.28	-.04	-.02	.25	.56	.62	.66	.70	.83	.71									
28	-.49		-.56	-.31	-.28	-.01	-.05	.20	.50	.52	.57	.59	.78	.32	.87								
30	-.52		-.21	-.04	-.12	-.28	-.21	.02	.31	.42	.50	.55	.66	.72	.73	.93							
32	-.55		-.35	.34	.60	.59	.17	.08	.41	.58	.41	.59	.57	.64	.82	.91	.97						
34																							
36																							
38																							
40																							
42																							

Correlation of Atmospheric Density at Pairs of Levels over GREAT FALLS, Mont., in AUGUST 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	1.124	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	186		186	185	185	185	185	185	181	173	169	160	156	143	103	70	22	2	1				
MN	1050		966	800	653	528	422	325	241	178	128	92.7	67.6	49.4	36.0	26.5	19.7	14.4	10.4				
SD	26.7		16.0	8.08	5.28	4.28	4.65	8.47	7.19	4.66	2.38	1.20	0.69	0.50	0.35	0.30	0.29						
CV	2.54		1.66	1.01	0.81	0.82	1.10	2.61	2.98	2.62	1.86	1.29	1.02	1.01	0.97	1.13	1.47						
1																							
2	.81																						
4	.51		.75																				
6	.20		.33	.67																			
8	.05		.09	.41	.71																		
10	-.17		-.32	-.24	-.03	.43																	
12	-.39		-.58	-.67	-.48	-.13	.62																
14	-.40		-.64	-.66	-.44	-.14	.43	.78															
16	-.42		-.65	-.64	-.39	-.06	.47	.74	.94														
18	-.42		-.56	-.52	-.22	.09	.48	.61	.79	.89													
20	-.41		-.49	-.39	-.13	.17	.47	.50	.69	.81	.89												
22	-.45		-.46	-.36	-.10	.20	.45	.45	.58	.72	.82	.89											
24	-.51		-.40	-.28	.00	.17	.25	.27	.35	.50	.64	.68	.85										
26	-.54		-.40	-.24	-.02	.14	.20	.22	.34	.48	.58	.64	.77	.91									
28	-.56		-.44	-.22	-.07	.23	.37	.23	.41	.50	.59	.66	.77	.84	.89								
30	-.79		-.78	-.73	-.30	.35	.60	.59	.71	.73	.79	.75	.84	.88	.87	.98							
32																							
34																							
36																							
38																							
40																							
42																							

Correlation of Atmospheric Density at Pairs of Levels over GREAT FALLS Mont., in SEPTEMBER 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	1.124	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	180		178	178	177	176	176	175	174	173	171	169	160	147	109	72	16	1					
MN	1070		982	807	655	528	420	321	237	174	126	91.3	66.4	45.4	35.3	25.9	19.2	13.9					
SD	31.2		22.7	12.3	7.09	5.09	6.57	11.4	8.19	5.39	2.82	1.37	0.87	0.72	0.52	0.41	0.26						
CV	2.92		2.31	1.52	1.08	0.96	1.56	3.55	3.46	3.10	2.24	1.50	1.31	1.49	1.47	1.58	1.35						
1																							
2	.85																						
4	.64		.85																				
6	.47		.59	.77																			
8	.17		.14	.25	.61																		
10	-.20		-.33	-.37	-.15	.49																	
12	-.41		-.59	-.61	-.50	.02	.73																
14	-.49		-.66	-.63	-.48	-.01	.58	.87															
16	-.50		-.67	-.60	-.40	.04	.52	.75	.91														
18	-.48		-.64	-.54	-.34	.06	.45	.64	.81	.93													
20	-.48		-.62	-.50	-.28	.08	.46	.60	.74	.87	.92												
22	-.58		-.65	-.52	-.26	.03	.35	.50	.67	.80	.83	.90											
24	-.58		-.60	-.49	-.28	-.05	.24	.40	.57	.72	.73	.75	.89										
26	-.53		-.53	-.42	-.30	-.23	.10	.32	.55	.64	.63	.64	.82	.95									
28	-.55		-.52	-.44	-.38	-.34	.03	.23	.44	.52	.55	.56	.72	.89	.97								
30	-.83		-.65	-.47	-.47	-.44	-.21	.10	.39	.49	.50	.51	.71	.81	.88	.96							
32																							
34																							
36																							
38																							
40																							
42																							

Correlation of Atmospheric Density at Pairs of Levels over GREAT FALLS, Mont., in OCTOBER 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO). Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	1.124	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	186		186	186	186	186	186	186	185	184	174	168	157	133	96	62	15						
MN	1091		997	812	657	528	418	318	235	172	125	90.4	65.5	47.4	34.6	25.2	18.6						
SD	31.7		23.3	11.9	7.44	5.42	8.38	11.7	7.84	5.24	2.49	1.29	0.84	0.48	0.39	0.34	0.28						
CV	2.91		2.34	1.47	1.13	1.03	2.00	0.37	3.34	3.05	1.99	1.43	1.28	1.01	1.13	1.35	1.51						
1																							
2	.85																						
4	.63		.81																				
6	.47		.57	.75																			
8	.14		.06	.09	.44																		
10	-.18		-.35	-.51	-.34	.44																	
12	-.30		-.47	-.60	-.51	.08	.80																
14	-.46		-.59	-.66	-.60	-.08	.60	.86															
16	-.48		-.61	-.68	-.62	-.06	.52	.71	.92														
18	-.46		-.58	-.62	-.57	-.07	.44	.62	.84	.92													
20	-.39		-.46	-.52	-.48	-.05	.34	.47	.67	.76	.85												
22	-.37		-.43	-.44	-.38	-.02	.35	.40	.56	.64	.73	.87											
24	-.29		-.38	-.44	-.36	.04	.40	.45	.52	.58	.65	.76	.82										
26	-.37		-.40	-.41	-.36	-.04	.37	.43	.53	.55	.54	.55	.68	.79									
28	-.53		-.48	-.48	-.49	.01	.34	.33	.43	.50	.38	.40	.48	.58	.80								
30	-.61		-.61	-.57	-.52	.24	.31	.29	.29	.49	.27	.24	.48	.41	.46	.91							
32																							
34																							
36																							
38																							
40																							
42																							

Correlation of Atmospheric Density at Pairs of Levels over GREAT FALLS, Mont., in NOVEMBER 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	1.124	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	179		178	178	178	177	177	176	175	175	173	170	148	126	82	33	9	3					
MN	1126		1022	824	662	528	412	309	226	165	121	87.7	63.7	46.2	33.6	24.4	17.8	12.9					
SD	43.5		33.0	16.1	9.20	6.29	11.3	12.8	7.81	5.30	2.95	1.62	1.08	0.84	0.68	0.49	0.57						
CV	3.86		3.23	1.95	1.39	1.19	2.74	4.14	3.46	3.21	2.44	1.85	1.70	1.82	2.02	2.01	3.20						
1																							
2	.93																						
4	.71		.82																				
6	.45		.56	.75																			
8	-.05		-.07	.04	.44																		
10	-.36		-.50	-.56	-.50	.29																	
12	-.40		-.52	-.61	-.62	-.00	.82																
14	-.45		-.56	-.61	-.59	-.09	.66	.88															
16	-.46		-.54	-.56	-.51	-.11	.51	.71	.90														
18	-.50		-.57	-.55	-.48	-.11	.44	.63	.84	.93													
20	-.47		-.52	-.42	-.36	-.04	.33	.50	.72	.82	.89												
22	-.33		-.39	-.30	-.29	-.02	.23	.39	.60	.70	.76	.88											
24	-.38		-.43	-.28	-.25	.07	.25	.34	.49	.57	.62	.75	.88										
26	-.47		-.48	-.23	-.17	-.04	.14	.22	.39	.53	.58	.69	.75	.91									
28	-.42		-.58	-.39	-.31	.18	.45	.51	.65	.73	.72	.70	.69	.77	.89								
30	-.53		-.46	-.52	-.32	.12	.37	.42	.47	.61	.57	.57	.71	.71	.86	.94							
32																							
34																							
36																							
38																							
40																							
42																							

Correlation of Atmospheric Density at Pairs of Levels over GREAT FALLS, Mont., in DECEMBER 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO). Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	1.124	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	186		184	184	182	180	179	178	173	173	168	166	147	129	97	45	10	1	1				
MN	1131		1022	825	665	532	417	311	225	164	121	87.4	63.5	46.3	33.8	24.8	18.2	13.0	0.95				
SD	35.6		26.3	13.6	7.99	5.22	10.3	13.2	6.95	4.47	2.53	1.54	0.97	0.75	0.66	0.54	0.46						
CV	3.15		2.57	1.65	1.20	0.98	2.47	4.24	3.09	2.73	2.09	1.76	1.53	1.62	1.95	2.18	2.53						
1																							
2	.89																						
4	.66		.79																				
6	.37		.50	.78																			
8	-.11		-.14	.06	.43																		
10	-.38		-.52	-.58	-.45	.37																	
12	-.34		-.50	-.57	-.51	.10	.80																
14	-.31		-.45	-.54	-.52	-.01	.68	.91															
16	-.29		-.40	-.51	-.51	-.13	.50	.67	.81														
18	-.23		-.31	-.40	-.43	-.17	.37	.53	.71	.91													
20	-.10		-.13	-.25	-.32	-.25	.19	.35	.54	.79	.91												
22	.17		.09	-.07	-.22	-.27	.04	.17	.36	.63	.75	.87											
24	.17		.14	-.05	-.25	-.28	.01	.10	.27	.53	.62	.78	.90										
26	-.01		-.05	-.12	-.22	-.23	.06	.06	.20	.36	.48	.64	.72	.88									
28	.03		.03	-.12	-.23	-.22	-.09	-.03	.05	.19	.35	.48	.64	.77	.90								
30	-.12		-.19	-.35	-.26	-.10	.05	-.16	.10	.49	.67	.74	.85	.86	.89	.98							
32																							
34																							
36																							
38																							
40																							
42																							

Correlation of Atmospheric Density at Pairs of Levels over OMAHA, Nebraska, in JANUARY 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.406	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	186	185	185	185	185	184	183	181	179	178	175	174	147	125	34	29	12	1					
MN	1269	1161	1026	823	662	529	411	304	223	164	121	87.2	63.4	45.9	33.2	24.3	17.8	13.4					
SD.	40.4	37.8	26.3	13.5	7.48	6.97	12.9	13.6	7.03	4.40	2.45	1.44	0.89	0.83	0.77	0.55	0.50						
CV	3.18	3.26	2.56	1.64	1.13	1.32	3.14	4.47	3.15	2.68	2.02	1.65	1.40	1.81	2.32	2.26	2.81						
1	.82																						
2	.75	.88																					
4	.70	.75	.87																				
6	.50	.47	.56	.73																			
8	-.10	-.26	-.25	-.10	.37																		
10	-.34	-.59	-.62	-.54	-.23	.61																	
12	-.37	-.62	-.70	-.62	-.39	.35	.83																
14	-.41	-.62	-.73	-.65	-.45	.29	.74	.94															
16	-.48	-.65	-.74	-.67	-.46	.27	.58	.85	.93														
18	-.48	-.58	-.68	-.63	-.47	.17	.54	.68	.78	.90													
20	-.55	-.57	-.63	-.61	-.45	.14	.39	.51	.61	.77	.89												
22	-.42	-.40	-.42	-.43	-.26	.11	.19	.23	.30	.50	.65	.82											
24	-.32	-.27	-.21	-.20	-.08	.08	-.02	-.07	-.01	.19	.36	.59	.80										
26	-.09	-.07	.07	.07	.12	.03	-.12	-.19	-.13	.04	.16	.28	.49	.86									
28	-.09	.14	.29	.07	.02	-.16	-.41	-.36	-.24	.02	.21	.40	.37	.68	.94								
30	.04	.09	.23	-.01	-.56	-.50	-.26	-.24	-.12	.18	.20	-.06	-.23	.25	.80	.93							
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Correlation of Atmospheric Density at Pairs of Levels over OMAHA, Nebraska, in FEBRUARY 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.406	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	169	168	168	167	167	167	167	167	164	162	158	153	133	112	81	56	29	6	2				
MN	1270	1'71	1033	826	663	529	408	300	219	162	120	86.6	62.9	45.8	33.3	24.2	17.8	12.8	9.30				
SD	47.8	4..6	30.2	15.3	9.45	6.31	12.7	13.0	6.37	4.39	2.67	1.53	0.85	0.53	0.35	0.26	0.19	0.10					
CV	3.76	3.55	2.92	1.85	1.43	1.19	3.11	4.33	2.91	2.71	2.23	1.77	1.35	1.16	1.05	1.07	1.07	0.78					
1	.90																						
2	.83	.91																					
4	.67	.72	.85																				
6	.52	.53	.63	.85																			
8	.17	.10	.08	.24	.52																		
10	-.29	-.44	-.59	-.62	-.50	.22																	
12	-.38	-.52	-.63	-.60	-.44	.14	.87																
14	-.40	-.51	-.61	-.61	-.43	.16	.79	.92															
16	-.52	-.61	-.68	-.63	-.43	.13	.71	.82	.91														
18	-.51	-.61	-.68	-.66	-.46	.07	.64	.76	.87	.96													
20	-.50	-.59	-.64	-.60	-.39	.08	.57	.69	.82	.91	.96												
22	-.51	-.57	-.63	-.60	-.38	.15	.55	.65	.77	.84	.88	.92											
24	-.41	-.49	-.53	-.48	-.24	.26	.46	.51	.64	.71	.75	.82	.89										
26	-.31	-.36	-.41	-.34	-.09	.31	.35	.34	.47	.53	.56	.61	.69	.83									
28	-.19	-.18	-.22	-.18	.05	.29	.23	.30	.43	.36	.34	.37	.38	.46	.73								
30	-.00	-.14	-.16	-.17	-.06	.35	.29	.21	.33	.33	.29	.30	.21	.39	.50	.75							
32	-.38	-.78	-.47	-.41	-.27	.24	.27	.28	.30	.44	.44	.61	.34	.52	.74	.75	.94						
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Correlation of Atmospheric Density at Pairs *of Levels* over OMAHA, Nebraska, in MARCH 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO). Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at *top* and along left side.

KM	.406	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	187	186	185	184	184	183	182	180	178	175	169	166	151	134	108	82	57	33	14				
MN	1241	1156	1029	825	663	530	413	302	220	162	119	86.3	62.8	45.6	33.3	24.2	18.0	13.2	9.70				
SD	39.4	33.9	24.2	12.5	7.19	5.09	11.4	11.4	5.42	3.54	1.98	1.33	0.99	0.80	0.59	0.38	0.36	0.29	0.23				
CV	3.17	2.93	2.35	1.52	1.08	0.96	2.76	3.77	2.46	2.19	1.66	1.54	1.58	1.75	1.77	1.57	2.00	2.20	2.37				
1	.88																						
2	.67	.85																					
4	.47	.60	.77																				
6	.25	.32	.45	.76																			
8	-.06	-.07	-.08	-.03	.34																		
10	-.21	-.33	-.50	-.61	-.44	.42																	
12	-.27	-.47	-.66	-.69	-.46	.22	.82																
14	-.22	-.45	-.67	-.66	-.41	.21	.76	.93															
16	-.29	-.49	-.68	-.63	-.35	.20	.62	.78	.89														
18	-.38	-.55	-.69	-.59	-.32	.15	.50	.65	.76	.89													
20	-.50	-.58	-.63	-.52	-.26	.08	.31	.42	.51	.71	.88												
22	-.61	-.62	-.59	-.48	-.25	-.01	.15	.26	.30	.52	.73	.91											
24	-.60	-.56	-.49	-.36	-.18	-.04	.05	.11	.13	.32	.58	.80	.91										
26	-.57	-.46	-.35	-.23	-.03	.06	-.06	-.05	-.01	.20	.43	.67	.79	.90									
28	-.12	-.03	.00	.17	.31	.20	-.21	-.31	-.24	-.04	.12	.29	.37	.53	.82								
30	.24	.34	.3[illegible]	.4[illegible]	.43	.32	-.25	-.42	-.34	-.26	-.23	-.20	-.25	-.07	.37	.84							
32	.38	.45	.39	.46	.49	.22	-.32	-.46	-.39	-.34	-.37	-.36	-.48	-.38	.10	.65	.96						
34	.33	.45	.59	.68	.38	-.14	-.64	-.73	-.61	-.65	-.66	-.66	-.66	-.52	-.17	.35	.83	.96					
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Correlation of Atmospheric Density at Pairs of levels over OMAHA, Nebraska, in APRIL 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.406	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	183	181	180	180	180	180	179	177	174	172	166	163	156	135	107	76	44	13	2	1			
MN	1185	1112	1003	815	660	529	417	312	227	167	122	88.2	63.8	46.5	34.0	24.7	18.1	13.2	9.50	7.00			
SD	35.5	29.6	25.1	14.1	8.37	4.87	9.44	11.7	5.93	3.82	2.20	1.15	0.73	0.46	0.44	0.38	0.31	0.20					
CV	3.00	2.66	2.50	1.73	1.27	0.92	2.26	3.75	2.61	2.29	1.80	1.30	1.14	0.99	1.29	1.54	1.71	1.52					
1	.88																						
2	.74	.88																					
4	.60	.68	.85																				
6	.45	.50	.65	.86																			
8	.06	.03	.14	.27	.48																		
10	-.34	-.43	-.42	-.41	-.28	.56																	
12	-.49	-.59	-.62	-.58	-.42	.22	.78																
14	-.50	-.58	-.64	-.60	-.45	.12	.65	.90															
16	-.47	-.51	-.57	-.60	-.50	-.06	.48	.71	.87														
18	-.38	-.40	-.50	-.54	-.46	-.20	.24	.50	.71	.86													
20	-.29	-.28	-.37	-.44	-.38	-.17	.19	.44	.61	.74	.85												
22	-.25	-.20	-.25	-.27	-.21	-.10	.16	.33	.51	.63	.72	.86											
24	-.33	-.23	-.25	-.26	-.19	-.02	.23	.35	.48	.59	.66	.72	.77										
26	-.43	-.39	-.35	-.27	-.16	.11	.38	.51	.55	.53	.44	.33	.45	.69									
28	-.35	-.39	-.32	-.21	-.11	.24	.43	.49	.49	.38	.23	.02	.07	.31	.82								
30	-.14	-.25	-.15	-.02	.06	.45	.43	.41	.41	.31	.13	-.09	-.02	.27	.76	.92							
32	-.05	-.15	-.05	.22	.28	.47	.15	.27	.27	.20	.19	-.12	-.03	.33	.64	.75	.93						
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Correlation of Atmospheric Density at Pairs of Levels over OMAHA, Nebraska in MAY 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO). Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.406	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	210	210	209	209	208	208	208	207	206	203	200	198	195	179	142	98	36	8	4	3			
MN	1154	1086	933	804	654	528	422	326	238	174	126	90.5	65.4	47.4	34.7	25.4	18.8	13.7	10.1	7.40			
SD	30.7	23.3	18.0	8.82	4.89	4.13	4.61	7.99	6.26	3.64	2.32	1.48	1.02	0.63	0.39	0.29	0.22	0.27	0.20				
CV	2.66	2.15	1.83	1.10	0.75	0.78	1.09	2.45	2.63	2.09	1.84	1.64	1.56	1.33	1.12	1.14	1.17	1.97	1.93				
1	.87																						
2	.74	.89																					
4	.60	.67	.30																				
6	.42	.46	.56	.73																			
8	.26	.25	.34	.40	.67																		
10	-.08	-.10	-.07	-.07	.13	.68																	
12	-.36	-.41	-.47	-.47	-.33	.05	.56																
14	-.43	-.49	-.52	-.48	-.36	-.08	.33	.83															
16	-.48	-.48	-.56	-.53	-.38	-.20	.17	.65	.79														
18	-.43	-.40	-.49	-.51	-.36	-.20	.11	.54	.64	.90													
20	-.33	-.27	-.37	-.42	-.28	-.17	.05	.43	.52	.81	.89												
22	-.31	-.25	-.34	-.39	-.22	-.16	.00	.32	.42	.71	.79	.91											
24	-.36	-.30	-.37	-.39	-.21	-.16	-.02	.29	.36	.64	.73	.84	.92										
26	-.36	-.30	-.34	-.36	-.16	-.06	.03	.27	.34	.59	.66	.76	.82	.90									
28	-.28	-.26	-.26	-.20	.05	.13	.14	.19	.19	.41	.53	.65	.67	.79	.86								
30	-.09	-.25	-.29	-.04	.16	.23	.22	.25	.18	.30	.47	.63	.65	.75	.73	.93							
32	-.09	-.32	-.31	-.33	.31	.35	.13	.16	.07	.32	.58	.56	.76	.73	.68	.83	.95						
34	-.80	-.79	-.95	-1.00	-.18	-.15	-.49	.34	.59	.86	.99	.81	.95	.94	.89	.99	1.00	.99					
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57D-I

Correlation of Atmospheric Density at Pairs of Levels over OMAHA, Nebraska, in JUNE 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.406	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	190	189	189	189	188	188	187	187	186	184	177	175	172	159	115	81	26	2	1				
MN	1138	1072	971	797	650	526	422	330	247	181	130	92.8	66.9	43.5	35.4	26.0	19.3	13.9	10.4				
SD	26.2	19.1	14.8	7.17	4.48	3.87	3.51	6.35	7.05	4.51	2.24	1.05	0.73	0.49	0.31	0.23	0.19						
CV	2.30	1.78	1.52	0.90	0.69	0.74	0.83	1.92	2.85	2.49	1.72	1.13	1.09	1.01	0.88	0.88	0.98						
1	.83																						
2	.61	.82																					
4	.52	.61	.79																				
6	.22	.25	.35	.59																			
8	-.04	.06	.15	.34	.71																		
10	-.14	-.13	-.10	.09	.36	.67																	
12	-.22	-.30	-.47	-.42	-.27	-.04	.46																
14	-.25	-.34	-.56	-.59	-.40	-.22	.11	.74															
16	-.29	-.36	-.53	-.59	-.43	-.26	.00	.52	.77														
18	-.27	-.28	-.40	-.48	-.35	-.22	-.03	.42	.58	.88													
20	-.27	-.25	-.34	-.37	-.29	-.16	.00	.38	.50	.78	.81												
22	-.30	-.28	-.33	-.38	-.25	-.09	.03	.31	.45	.74	.76	.84											
24	-.19	-.20	-.22	-.34	-.28	-.12	-.05	.18	.40	.67	.65	.73	.88										
26	-.10	-.12	-.18	-.30	-.28	-.24	-.14	.10	.32	.53	.52	.65	.73	.81									
28	-.27	-.31	-.38	-.42	-.38	-.25	-.13	.17	.40	.57	.49	.57	.62	.69	.87								
30	-.45	-.56	-.55	-.45	-.32	-.28	.05	.23	.52	.62	.53	.60	.54	.62	.67	.90							
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Correlation of Atmospheric Density at Pairs of Levels over OMAHA, Nebraska, in JULY 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.406	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	198	194	193	192	191	191	188	187	182	172	163	157	150	132	97	67	16	3	2	1			
MN	1133	1068	972	797	649	526	422	331	250	185	131	93.7	67.7	49.2	35.8	26.3	19.5	14.2	10.6	7.90			
SD	22.5	14.3	12.1	6.57	4.29	3.92	3.07	3.34	5.71	3.76	2.01	1.02	0.61	0.42	0.28	0.22	0.13						
CV	1.99	1.34	1.24	0.82	0.66	0.75	0.73	1.01	2.28	2.03	1.53	1.09	0.90	0.85	0.78	0.84	0.67						
1	.77																						
2	.58	.83																					
4	.41	.48	.69																				
6	.13	.16	.33	.67																			
8	.02	.09	.34	.51	.76																		
10	.01	.04	.25	.42	.62	.77																	
12	-.15	-.26	-.29	-.30	-.26	-.24	.07																
14	-.19	-.29	-.46	-.60	-.52	-.59	-.49	.49															
16	-.29	-.39	-.53	-.65	-.45	-.51	-.42	.40	.88														
18	-.32	-.39	-.45	-.44	-.22	-.19	-.16	.31	.57	.71													
20	-.29	-.32	-.33	-.29	-.12	-.09	-.03	.31	.41	.53	.74												
22	-.43	-.37	-.32	-.27	-.06	-.07	.03	.27	.38	.49	.62	.75											
24	-.39	-.35	-.24	-.24	-.06	.01	.11	.32	.28	.36	.50	.66	.82										
26	-.26	-.34	-.23	-.27	-.01	.06	.19	.36	.20	.32	.41	.53	.63	.79									
28	-.17	-.33	-.32	-.31	-.14	-.08	.04	.42	.27	.38	.41	.53	.58	.61	.82								
30	.10	.03	-.16	-.44	-.30	-.17	-.25	.23	.20	.14	.05	.05	.16	.23	.25	.87							
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Correlation of Atmospheric Density at Pairs of Levels over OMAHA, Nebraska, in AUGUST 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.406	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	200	199	199	199	197	197	194	191	191	188	185	180	173	163	122	81	16						
MN	1126	1058	962	795	648	525	421	332	253	186	132	93.9	67.8	49.3	35.9	26.4	19.6						
SD	23.0	15.8	12.3	5.07	4.02	3.36	2.85	4.77	6.52	4.25	2.15	1.00	0.64	0.44	0.28	0.22	0.20						
CV	2.04	1.49	1.28	0.64	0.62	0.64	0.68	1.44	2.58	2.28	1.63	1.06	0.94	0.89	0.78	0.83	1.02						
1	.74																						
2	.61	.88																					
4	.52	.58	.69																				
6	.19	.10	.14	.47																			
8	.16	.15	.18	.41	.76																		
10	.00	-.02	-.02	.10	.44	.67																	
12	-.34	-.45	-.50	-.53	-.31	-.30	.10																
14	-.38	-.46	-.50	-.54	-.46	-.54	-.33	.75															
16	-.47	-.53	-.55	-.55	-.43	-.51	-.36	.65	.91														
18	-.47	-.51	-.45	-.46	-.26	-.32	-.22	.55	.71	.82													
20	-.47	-.42	-.37	-.43	-.30	-.36	-.28	.44	.60	.73	.82												
22	-.48	-.36	-.36	-.43	-.20	-.25	-.16	.41	.44	.57	.70	.75											
24	-.36	-.24	-.27	-.30	-.10	-.12	-.11	.19	.23	.38	.50	.56	.83										
26	-.32	-.21	- 20	-.20	.02	-.07	-.04	.17	.16	.27	.44	.44	.64	.83									
28	-.29	-.15	- 20	-.21	.02	-.03	.02	.20	.25	.30	.41	.30	.51	.64	.82								
30	.16	.22	.11	-.21	-.08	.23	.22	-.08	.02	-.04	.48	.39	.50	.65	.67	.94							
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Correlation of Atmospheric Density at Pairs of Levels over OMAHA, Nebraska, in SEPTEMBER 1958-1960

First five lines indicate level (KM in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.406	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	188	187	187	184	183	183	183	182	178	177	175	171	163	144	117	70	14						
MN	1150	1079	976	799	649	526	422	330	248	182	130	92.6	66.9	48.5	35.4	25.9	19.3						
SD	31.7	24.0	17.0	7.90	5.54	4.52	4.01	6.57	7.69	6.10	2.90	1.32	0.87	0.67	0.41	0.31	0.20						
CV	2.76	2.22	1.74	0.99	0.85	0.86	0.95	1.99	3.10	3.35	2.23	1.43	1.30	1.38	1.16	1.28	1.04						
1	.87																						
2	.78	.90																					
4	.63	.67	.74																				
6	.41	.40	.40	.62																			
8	.30	.29	.31	.48	.82																		
10	.14	.10	.08	.17	.49	.73																	
12	-.28	-.33	-.40	-.43	-.26	-.06	.49																
14	-.47	-.53	-.57	-.60	-.53	-.37	.07	.73															
16	-.49	-.54	-.56	-.57	-.53	-.40	-.03	.55	.91														
18	-.45	-.49	-.49	-.49	-.48	-.35	.01	.49	.84	.94													
20	-.50	-.52	-.48	-.50	-.41	-.28	.01	.41	.76	.87	.87												
22	-.47	-.45	-.43	-.40	-.25	-.15	.03	.33	.61	.69	.69	.85											
24	-.49	-.46	-.43	-.39	-.22	-.12	.00	.23	.50	.59	.60	.77	.92										
26	-.42	-.39	-.37	-.34	-.10	-.00	.06	.19	.41	.46	.47	.64	.83	.91									
28	-.36	-.36	-.38	-.27	-.13	.01	.16	.21	.38	.42	.46	.53	.69	.82	.92								
30	.12	.14	.07	.19	-.09	-.15	-.29	-.14	.06	-.01	-.16	.00	.41	.59	.80	.97							
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Corre!ation of Atmospheric Density at Pairs of Levels over OMAHA, Nebraska, in OCTOBER 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.406	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	191	190	190	190	190	184	183	181	177	172	148	145	138	121	101	69	13	2					
MN	1182	1104	993	807	654	528	420	321	239	176	127	91.0	65.4	47.2	34.4	25.1	18.5	13.4					
SD	32.8	26.8	19.7	9.80	6.26	5.14	6.74	8.74	6.17	4.59	2.53	1.21	0.67	0.48	0.41	0.36	0.26						
CV	2.77	2.43	1.98	1.21	0.96	0.97	1.60	2.72	2.58	2.61	1.99	1.33	1.02	1.02	1.19	1.43	1.41						
1	.82																						
2	.71	.89																					
4	.52	.59	.77																				
6	.28	.29	.39	.64																			
8	.08	.01	.07	.24	.67																		
10	-.07	-.19	-.22	-.10	.15	.56																	
12	-.27	-.41	-.47	-.42	-.24	.16	.71																
14	-.38	-.52	-.61	-.61	-.36	.06	.46	.79															
16	-.43	-.57	-.63	-.61	-.30	.08	.27	.53	.88														
18	-.49	-.62	-.63	-.56	-.20	.13	.19	.44	.77	.92													
20	-.47	-.57	-.56	-.49	-.12	.12	.14	.39	.70	.83	.91												
22	-.43	-.42	-.44	-.38	-.03	.07	.05	.24	.49	.57	.65	.80											
24	-.28	-.19	-.22	-.18	.04	.03	-.05	.09	.30	.38	.45	.61	.80										
26	-.24	-.18	-.13	-.07	.18	.14	.11	.15	.26	.29	.34	.52	.73	.80									
28	-.27	-.23	-.15	-.07	.00	.12	.18	.29	.35	.37	.31	.38	.57	.61	.84								
30	-.05	-.35	-.39	-.07	.11	.51	.82	.77	.78	.68	.43	.39	.51	.60	.64	.94							
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Correlation of Atmospheric Density at Pairs of Levels over OMAHA, Nebraska, in NOVEMBER 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.406	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	182	182	182	182	182	180	180	179	169	166	153	151	134	117	97	47	18	6	6				
MN	1223	1136	1013	814	656	526	414	313	231	170	124	89.1	64.3	46.5	33.7	24.5	17.9	13.0	9.50				
SD	43.1	40.8	29.4	13.9	7.83	6.20	11.3	12.0	7.16	5.38	2.65	1.38	0.81	0.69	0.64	0.52	0.37	0.29	0.21				
CV	3.52	3.59	2.90	1.71	1.19	1.18	2.73	3.83	3.10	3.12	2.14	1.55	1.26	1.48	1.90	2.12	2.07	2.23	2.21				
1	.89																						
2	.80	.91																					
4	.57	.64	.80																				
6	.35	.38	.48	.74																			
8	.10	.01	-.02	.03	.41																		
10	-.14	-.29	-.38	-.49	-.23	.60																	
12	-.27	-.43	-.54	-.62	-.37	.34	.85																
14	-.40	-.56	-.65	-.69	-.48	.21	.67	.86															
16	-.47	-.59	-.66	-.69	-.49	.10	.47	.65	.90														
18	-.51	-.61	-.64	-.65	-.51	-.04	.30	.50	.78	.92													
20	-.51	-.54	-.55	-.54	-.49	-.21	.06	.25	.53	.74	.83												
22	-.36	-.38	-.36	-.32	-.37	-.32	-.17	.03	.31	.55	.67	.83											
24	-.34	-.37	-.32	-.22	-.25	-.23	-.14	.00	.24	.47	.56	.75	.84										
26	-.28	-.34	-.25	-.11	-.12	-.20	-.08	.02	.18	.37	.46	.65	.75	.90									
28	-.36	-.44	-.40	-.34	-.16	-.09	.03	.15	.30	.41	.53	.61	.68	.77	.91								
30	-.18	-.30	-.23	-.12	.01	-.11	.01	.15	.15	.13	.31	.29	.33	.49	.68	.84							
32	.19	-.10	-.20	-.78	-.46	-.19	.85	.92	.85	.72	.85	.72	.89	.82	.85	.85	.96						
34	.42	.20	.10	-.66	-.62	-.45	.69	.73	.67	.62	.75	.69	.89	.64	.64	.61	.80	.93					
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Correlation of Atmospheric Density at Pairs of Levels over OMAHA Nebraska, in DECEMBER 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO). Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.406	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	185	185	185	185	185	185	185	184	181	177	160	152	140	129	109	45	24	6	3				
MN	1250	1156	.024	821	662	530	415	310	226	166	122	87.8	63.6	46.1	33.5	24.4	18.0	13.1	9.60				
SD	39.2	36.2	26.6	13.4	8.04	5.85	10.1	12.5	7.10	4.15	2.54	1.54	0.83	0.69	0.54	0.36	0.31	0.16					
CV	3.14	3.30	2.60	1.63	1.21	1.10	2.43	4.03	3.14	2.50	2.08	1.75	2.40	1.50	1.61	1.48	1.72	1.22					
1	.86																						
2	.82	.91																					
4	.66	.75	85																				
6	.48	.48	.57	.80																			
8	.08	-.09	-.06	.06	.41																		
10	-.30	-.50	-.56	-.57	-.37	.47																	
12	-.41	-.57	-.65	-.67	-.48	.22	.83																
14	-.46	-.60	-.69	-.72	-.53	.16	.74	.91															
16	-.48	-.60	-.68	-.72	-.55	.11	.62	.69	.85														
18	-.43	-.49	-.59	-.65	-.56	.01	.45	.51	.69	.90													
20	-.33	-.39	-.50	-.57	-.53	-.03	.34	.38	.57	.78	.90												
22	-.22	-.26	-.35	-.45	-.49	-.17	.16	.20	.36	.57	.75	.90											
24	-.11	-.13	-.24	-.28	-.34	-.16	.07	.09	.22	.41	.56	.75	.87										
26	-.07	-.01	-.09	-.20	-.30	-.18	-.03	-.07	.04	.23	.32	.54	.66	.84									
28	-.24	-.14	-.24	-.44	-.50	-.28	-.10	-.04	.01	.14	.27	.35	.44	.62	.80								
30	-.03	-.12	-.19	-.52	-.53	-.32	-.20	-.08	.01	.01	.11	.17	.26	.37	.59	.84							
32	.23	.20	.08	-.14	.63	-.36	-.35	-.14	-.18	-.02	-.10	.11	.45	.46	.79	.94	.91						
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Correlation of Atmospheric Density at Pairs of Levels over WASHINGTON, D. C., in JANUARY 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as *percentage of mean*).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.089	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	207	206	206	205	204	202	202	199	190	184	166	161	145	133	102	56	25	7	1				
MN	1278	1153	1026	820	658	524	409	306	225	166	122	87.7	63.2	45.7	33.0	24.0	17.6	12.7	8.90				
SD	31.7	30.7	23.7	12.5	8.07	8.03	13.7	13.7	7.79	5.06	2.96	1.72	1.11	0.74	0.55	0.49	0.57	0.46					
CV	2.48	2.66	2.3[illegible]	1.52	1.23	1.53	3.35	4.48	3.46	3.05	2.43	1.96	1.76	1.62	1.67	2.04	3.24	3.62					
1	.82																						
2	.72	.90																					
4	.63	.74	.83																				
6	.42	.41	.48	.69																			
8	.17	-.05	-.10	-.02	.43																		
10	-.04	-.38	-.45	-.40	-.09	.66																	
12	-.18	-.49	-.58	-.54	-.31	.35	.84																
14	-.23	-.50	-.58	-.56	-.37	.24	.75	.92															
16	-.28	-.52	-.58	-.54	-.37	.16	.65	.79	.91														
18	-.27	-.52	-.63	-.58	-.44	.05	.59	.73	.84	.94													
20	-.34	-.50	-.61	-.57	-.51	-.11	.33	.54	.69	.81	.88												
22	-.35	-.39	-.50	-.46	-.45	-.25	.10	.30	.46	.60	.70	.87											
24	-.27	-.24	-.32	-.30	-.37	-.21	.06	.18	.34	.46	.52	.71	.85										
26	-.30	-.21	-.13	-.25	-.19	-.06	.00	.02	.14	.22	.21	.37	.46	.76									
28	-.15	.01	.04	-.13	-.19	-.05	-.04	.02	.03	.09	.05	.16	.20	.47	.83								
30	.04	.17	.26	.19	.13	.19	-.04	-.18	-.24	-.16	-.27	-.17	-.17	.10	.64	.92							
32	.11	.24	.43	.44	.63	.49	-.25	-.35	-.57	-.58	-.65	-.52	-.65	-.31	.43	.73	.97						
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Correlation of Atmospheric Density at Pairs of Levels over WASHINGTON, D C. in FEBRUARY 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO). Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.089	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	169	169	169	158	168	168	168	163	159	156	143	138	126	116	95	56	28	12	6				
MN	1276	1154	1023	819	657	523	406	303	223	165	121	87.1	63.1	45.8	33.3	24.3	17.9	12.9	9.40				
SD	34.0	34.5	25.5	12.5	8.29	8.74	14.8	14.5	9.49	5.93	3.18	1.51	0.77	0.47	0.35	0.33	0.24	0.17	0.11				
CV	2.67	2.99	2.43	1.53	1.26	1.67	3.65	4.79	3.81	3.59	2.63	1.73	1.22	1.03	1.05	1.36	1.34	1.32	1.17				
1	.88																						
2	.76	.92																					
4	.66	.75	.83																				
6	.43	.35	.37	.62																			
8	.01	-.15	-.21	-.07	.57																		
10	-.20	-.40	-.57	-.36	.18	.69																	
12	-.29	-.46	-.53	-.45	-.02	.44	.85																
14	-.32	-.50	-.61	-.47	-.12	.31	.72	.91															
16	-.37	-.50	-.63	-.46	-.16	.22	.60	.79	.93														
18	-.41	-.53	-.62	-.51	-.17	.33	.59	.76	.89	.95													
20	-.40	-.50	-.53	-.46	-.12	.27	.52	.69	.83	.89	.93												
22	-.29	-.37	-.43	-.30	-.08	.18	.33	.49	.64	.69	.73	.85											
24	-.14	-.13	-.14	-.06	-.01	-.05	.06	30	.46	.47	.51	.63	.80										
26	-.11	-.05	-.01	.02	-.03	-.17	-.13	.13	.28	.31	.33	.45	.56	.81									
28	.13	.25	.29	.29	.03	-.17	-.26	- 00	.13	.14	.14	.23	.39	.46	.69								
30	.27	.41	.43	.45	-.06	-.42	-.61	-.38	.07	.17	.22	.36	.47	.63	.81	.93							
32	.17	.20	.29	.49	.13	-.53	-.73	-.63	-.17	.14	.24	.30	.42	.49	.66	.72	.83						
34	-.41	-.31	-.09	-.19	-.42	-.79	-.65	-.25	.08	.27	.45	.23	.08	.42	.43	.26	.43	.92					
36																							
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Correlation of Atmospheric Density at Pairs of Levels over WASHINGTON, D. C. in MARCH 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO). Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.089	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	186	186	185	185	185	184	184	183	179	177	172	172	159	153	140	116	49	11					
MN	1266	1150	1030	824	661	526	408	303	222	164	120	86.8	62.9	45.8	33.5	24.4	18.1	13.2					
SD	33.1	30.7	23.5	12.8	7.29	8.34	13.6	13.1	6.95	4.87	2.99	1.95	1.30	0.84	0.55	0.31	0.21	0.16					
CV	2.61	2.67	2.28	1.55	1.10	1.59	3.33	4.32	3.13	2.97	2.49	2.28	2.07	1.83	1.64	1.27	1.16	1.21					
1	.88																						
2	.72	.89																					
4	.49	.60	.76																				
6	.34	.35	.43	.66																			
8	-.02	-.16	-.23	-.09	.43																		
10	-.22	-.42	-.54	-.46	-.11	.67																	
12	-.37	-.55	-.67	-.56	-.31	.41	.85																
14	-.47	-.61	-.69	-.63	-.42	.26	.73	.92															
16	-.50	-.61	-.69	-.62	-.41	.16	.61	.77	.91														
18	-.52	-.61	-.69	-.64	-.38	.15	.53	.69	.84	.94													
20	-.56	-.64	-.72	-.67	-.35	.16	.50	.62	.76	.86	.93												
22	-.53	-.61	-.65	-.59	-.25	.14	.38	.46	.58	.73	.81	.93											
24	-.47	-.54	-.56	-.50	-.15	.18	.35	.38	.47	.61	.70	.85	.94										
26	-.38	-.45	-.45	-.42	-.06	.12	.25	.24	.33	.44	.54	.70	.82	.89									
28	-.08	-.12	-.13	-.24	-.02	-.04	-.04	-.07	.03	.15	.20	.32	.43	.51	.76								
30	.17	.18	.21	.03	.03	-.15	-.13	-.22	-.24	-.24	-.16	-.11	-.02	-.03	.20	.57							
32	-.23	-.03	.10	.17	.24	.02	-.26	-.38	.43	-.49	-.32	-.37	-.32	-.22	-.11	.18	.87						
34																							
36																							
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42																							

Correlation of Atmospheric Density at Pairs of Levels over WASHINGTON, D. C. in APRIL 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.089	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	180	178	173	178	177	176	176	173	171	166	155	152	146	134	116	79	31	14	4	1			
MN	1220	1109	1003	814	658	529	419	319	232	170	124	89.0	64.1	46.5	34.0	24.9	18.3	13.2	9.60	7.10			
SD	31.8	27.1	19.3	9.58	6.18	5.89	9.56	13.7	7.79	4.71	2.66	1.42	0.75	0.48	0.35	0.28	0.21	0.16	0.16				
CV	2.61	2.44	1.92	1.18	0.94	1.11	2.28	4.29	3.36	2.77	2.15	1.60	1.17	1.03	1.03	1.12	1.15	1.21	1.67				
1	.87																						
2	.73	.90																					
4	.43	.56	.75																				
6	.25	.30	.49	.73																			
8	-.10	-.15	-.07	.11	.48																		
10	-.36	-.52	-.57	-.47	-.17	.60																	
12	-.43	-.60	-.67	-.58	-.35	.30	.84																
14	-.39	-.57	-.66	-.58	-.37	.21	.71	.91															
16	-.40	-.55	-.64	-.59	-.40	.09	.60	.81	.90														
18	-.41	-.53	-.63	-.57	-.38	.02	.48	.72	.82	.94													
20	-.39	-.51	-.61	-.57	-.35	.03	.44	.65	.76	.88	.89												
22	-.38	-.48	-.53	-.49	-.24	.03	.35	.54	.63	.72	.70	.84											
24	-.27	-.33	-.39	-.33	-.14	.06	.26	.37	.43	.50	.46	.63	.80										
26	-.15	-.21	-.28	-.21	-.01	.11	.23	.28	.27	.32	.30	.39	.60	.78									
28	-.12	-.12	-.22	-.17	.08	.08	.18	.27	.28	.34	.36	.33	.39	.49	.79								
30	-.12	-.13	-.08	.06	-.01	-.15	-.11	.02	.13	.18	.29	.10	.17	.10	.31	.68							
32	-.23	-.20	-.26	-.18	-.43	-.26	-.15	-.12	-.07	-.01	.01	.01	.05	.09	.18	.18	.86						
34	-.19	.26	.42	.45	-.46	-.04	-.25	-.53	-.45	-.00	.17	.28	.71	-.12	.07	.15	.75	.93					
36																							
38																							
40																							
42																							

Correlation of Atmospheric Density at Pairs of Levels over WASHINGTON, D. C., in MAY 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.089	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	189	183	183	182	182	182	182	180	176	175	163	161	158	142	117	88	41	11	4				
MN	12[illegible]	1096	993	808	654	528	420	326	241	175	126	90.7	65.4	47.4	34.6	25.3	18.7	13.5	10.0				
SD	23.[illegible]	17.3	12.4	6.94	5.20	3.86	6.46	11.2	9.66	5.07	2.94	1.54	1.02	0.53	0.35	0.33	0.30	0.27	0.34				
CV	1.9[illegible]	1.58	1.25	0.86	0.80	0.73	1.54	3.44	4.01	2.90	2.33	1.70	1.56	1.12	1.01	1.30	1.60	2.00	3.40				
1	.90																						
2	.64	.89																					
4	.41	.53	.64																				
6	.38	.48	.56	.78																			
8	.13	.19	.23	.41	.69																		
10	-.24	-.34	-.38	-.23	-.04	.42																	
12	-.35	-.52	-.58	-.4.	-.28	.10	.81																
14	-.46	-.59	-.62	-.44	-.31	.03	.66	.39															
16	-.52	-.62	-.67	-.53	-.36	.02	.60	.83	.91														
18	-.52	-.59	-.64	-.58	-.39	-.05	.46	.70	.82	.94													
20	-.47	-.49	-.54	-.51	-.32	-.02	.39	.59	.71	.86	.92												
22	-.45	-.47	-.49	-.46	-.28	.01	.39	.58	.68	.80	.86	.91											
24	-.40	-.40	-.42	-.41	-.27	.02	.38	.52	.61	.74	.79	.84	.87										
26	-.30	-.37	-.39	-.43	-.34	-.12	.35	.51	.56	.65	.67	.66	.72	.84									
28	-.19	-.31	-.34	-.38	-.35	-.14	.34	.49	.48	.49	.48	.40	.47	.59	.86								
30	-.15	-.26	-.19	-.39	-.46	-.41	.01	.31	.27	.30	.36	.24	.43	.56	.79	.96							
32	.02	-.29	-.24	-.40	-.55	-.38	-.39	.08	.03	.11	.26	.27	.54	.66	.75	.91	.98						
34	.04	-.57	-.57	-.76	-.90	-.77	-.12	.58	.52	.41	.42	.42	.56	.82	.86	.89	.91	.95					
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Correlation of Atmospheric Density at Pairs of Levels over WASHINGTON, D. C., in JUNE 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.089	1	2	4	6	3	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	181	181	180	180	178	178	178	178	178	175	171	170	158	144	131	101	33	7	4	2			
MN	1130	1082	983	802	650	525	420	329	247	181	129	92.4	66.7	48.3	35.2	25.8	19.1	13.9	10.3	7.60			
SD	22.4	16.2	12.1	6.01	4.79	4.41	4.87	7.67	8.48	5.00	2.20	1.12	0.75	0.53	0.31	0.26	0.17	0.15	0.21				
CV	1.90	1.50	1.23	0.75	0.74	0.84	1.16	2.33	3.43	2.76	1.71	1.21	1.12	1.10	0.83	1.01	0.89	1.08	2.04				
1	.85																						
2	.69	.87																					
4	.43	.51	.70																				
6	.27	.34	.50	.77																			
8	.13	.19	.35	.57	.76																		
10	-.09	-.15	-.13	.05	.24	.55																	
12	-.37	-.50	-.64	-.53	-.31	-.08	.56																
14	-.47	-.57	-.72	-.62	-.39	-.28	.23	.80															
16	-.47	-.58	-.69	-.61	-.38	-.25	.20	.69	.88														
18	-.45	-.53	-.60	-.52	-.29	-.18	.21	.63	.80	.91													
20	-.39	-.44	-.45	-.35	-.15	-.02	.22	.45	.61	.75	.82												
22	-.35	-.33	-.25	-.17	-.04	.04	.08	.16	.31	.45	.52	.76											
24	-.34	-.29	-.20	-.12	.00	.12	.05	.11	.25	.37	.41	.59	.89										
26	-.24	-.23	-.14	-.10	-.03	.07	.07	.12	.23	.34	.34	.54	.76	.88									
28	-.17	-. 9	-.14	-.16	-.09	.01	-.01	.16	.26	.41	.36	.46	.61	.72	.84								
30	-.13	-.15	-.00	.04	.14	.38	.17	.12	.11	.27	.21	.26	.43	.63	.65	.94							
32	.16	-.01	.04	.25	.10	-.02	-.52	-.05	.16	.49	.54	.43	.42	.48	.33	.66	.88						
34	.06	-.11	-.06	-.11	-.29	-.29	-.78	.13	.46	.63	.89	.63	.53	.56	.50	.58	.81	.99					
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Correlation of Atmospheric Density at Pairs of Levels over WASHINGTON, D. C., in JULY 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.083	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	186	186	186	185	184	154	183	183	181	174	168	163	158	140	125	99	35	6	5				
MN	1171	1074	977	799	648	524	421	334	255	186	132	93.7	67.7	49.2	35.8	26.4	19.5	14.4	10.7				
SD	16.1	10.9	8.24	4.55	3.92	3.81	3.00	3.62	5.12	3.47	1.71	0.79	0.57	0.43	0.27	0.22	0.20	0.14	0.13				
CV	1.37	1.01	0.84	0.57	0.60	0.73	0.71	1.08	2.01	1.87	1.30	0.84	0.84	0.87	0.75	0.83	1.03	0.97	1.21				
1	.77																						
2	.58	.86																					
4	.34	.42	.57																				
6	.25	.35	.53	.73																			
8	.28	.42	.62	.63	.78																		
10	.13	.21	.43	.59	.68	.82																	
12	-.08	-.16	-.14	.21	.23	.16	.53																
14	-.28	-.42	-.55	-.33	-.29	-.44	-.15	.55															
16	-.28	-.42	-.56	-.46	-.38	-.48	-.26	.26	.77														
18	-.28	-.38	-.45	-.36	-.29	-.31	-.14	.25	.55	.75													
20	-.31	-.30	-.35	-.21	-.15	-.16	-.05	.27	.37	.47	.67												
22	-.21	-.15	-.15	-.02	-.03	.01	.11	.25	.19	.24	.41	.73											
24	-.15	-.03	-.09	.08	-.01	-.06	.05	.24	.15	.14	.29	.53	.84										
26	-.08	-.07	-.11	.10	-.08	-.13	-.02	.22	.18	.16	.19	.42	.67	.81									
28	-.04	-.02	-.04	-.01	-.11	-.10	-.02	.16	.04	.04	-.00	.21	.51	.55	.78								
30	-.19	-.09	-.14	-.22	-.34	-.27	-.12	.16	.26	.39	.18	.25	.47	.43	.62	.91							
32	.25	.27	-.05	-.42	-.10	-.48	-.47	-.59	.23	.83	.75	.56	.57	.48	.56	.75	.94						
34	.02	.47	.09	-.96	-.79	-.79	-.84	.74	.22	.59	.02	-.51	.01	-.02	.20	.44	.53	.50					
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71E-I

Correlation of Atmospheric Density at Pairs of Levels over WASHINGTON, D. C., in AUGUST 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO). Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.089	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	186	186	186	183	182	182	181	180	176	155	145	143	142	134	120	96	55	18	15	4			
MN	1171	1072	975	797	647	524	421	333	255	187	132	94.1	68.0	49.3	35.9	26.4	19.6	14.3	10.6	7.80			
SD	17.2	10.4	6.60	3.81	3.78	3.81	3.20	4.02	5.46	3.89	1.75	0.88	0.61	0.43	0.27	0.21	0.17	0.14	0.20	0.17			
CV	1.47	0.97	0.68	0.48	0.58	0.73	0.76	1.21	2.14	2.08	1.33	0.94	0.90	0.87	0.75	0.80	0.87	0.98	1.89	2.18			
1	.78																						
2	.51	.77																					
4	.12	.04	.25																				
6	.24	.20	.45	.55																			
8	.15	.24	.44	.35	.71																		
10	.06	.10	.32	.30	.49	.73																	
12	-.18	-.26	-.22	.09	.07	.08	.49																
14	-.26	-.41	-.49	-.13	-.22	-.23	.03	.73															
16	-.26	-.37	-.44	-.16	-.18	-.06	.12	.61	.86														
18	-.25	-.24	-.26	-.04	.01	.18	.22	.50	.59	.78													
20	-.18	-.07	-.05	.02	.16	.24	.31	.41	.35	.48	.71												
22	-.14	.03	.14	.03	.22	.25	.19	.04	-.06	.05	.33	.67											
24	-.14	.03	.10	.03	.24	.23	.15	-.02	-.12	-.05	.18	.44	.79										
26	-.13	.04	.10	.04	.19	.24	.19	-.03	-.11	.02	.19	.36	.58	.82									
28	.11	.20	.14	-.01	.11	.14	.06	-.13	-.12	-.02	.09	.31	.52	.63	.81								
30	.18	.12	.04	-.09	.02	.07	.05	-.12	-.16	-.10	-.04	.21	.46	.56	.70	.91							
32	.50	.31	.19	-.14	-.06	-.08	-.06	.15	.24	.26	.24	.12	.50	.44	.54	.74	.90						
34	.66	.36	.28	.20	.19	.18	.17	.15	.12	.02	.14	.34	.35	.28	.48	.72	.80	.81					
36	.58	.41	.67	.89	.92	.41	.56	.12	.13	-.57	.13	.62	-.16	-.81	-.13	.61	.91	.97	.94				
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Correlation of Atmospheric Density at Pairs of Levels over WASHINGTON, D. C., in SEPTEMBER 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard Deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.089	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	181	180	180	180	179	179	179	179	174	155	151	150	145	137	124	96	44	17	11	5			
MN	1193	1089	985	800	649	526	422	333	253	185	131	93.0	66.9	48.5	35.4	26.0	19.3	14.1	10.4	7.70			
SD	24.7	17.9	11.7	5.54	4.56	4.27	4.43	5.52	6.62	4.86	2.56	1.38	0.87	0.59	0.32	0.27	0.20	0.14	0.11	0.11			
CV	2.07	1.64	1.19	0.69	0.70	0.81	1.05	1.66	2.62	2.63	1.95	1.48	1.30	1.22	0.90	1.04	1.04	0.99	1.06	1.43			
1	.87																						
2	.73	.87																					
4	.40	.45	.53																				
6	.35	.41	.44	.63																			
8	.39	.45	.44	.52	.77																		
10	.25	.28	.21	.32	.53	.77																	
12	-.13	-.21	-.32	-.13	.06	.24	.61																
14	-.44	-.54	-.60	-.45	-.30	-.20	.16	.74															
16	-.44	-.55	-.60	-.56	-.37	-.22	.12	.63	.92														
18	-.42	-.48	-.56	-.58	-.34	-.15	.16	.57	.81	.92													
20	-.45	-.50	-.57	-.59	-.31	-.12	.14	.53	.76	.87	.90												
22	-.48	-.47	-.54	-.51	-.20	-.08	.06	.45	.66	.72	.75	.87											
24	-.38	-.35	-.41	-.20	-.10	.01	.08	.32	.41	.46	.49	.60	.80										
26	-.32	-.26	-.29	-.09	-.12	.05	.07	.28	.32	.33	.37	.49	.69	.86									
28	-.21	-.16	-.16	-.07	-.08	.00	-.04	.08	.13	.17	.25	.36	.55	.75	.88								
30	-.20	-.12	-.21	-.24	-.12	-.22	-.16	.05	.07	.19	.27	.37	.52	.65	.69	.96							
32	.49	.48	.27	.21	.21	-.12	-.22	-.12	-.27	-.12	.12	.20	.44	.56	.55	.83	.93						
34	-.05	-.21	-.33	-.06	-.14	-.61	-.49	-.01	.11	.24	.09	.30	.42	.49	.39	.54	.55	.64					
36	-.42	-.81	-.74	-.54	-.05	-.25	.19	.67	.72	.74	.63	.70	.69	.76	.60	.11	-.12	.48	.90				
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Correlation of Atmospheric Density at Pairs of Levels over WASHINGTON, D. C. in OCTOBER 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO). Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.089	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	186	186	185	185	184	184	182	181	168	153	139	134	130	118	111	93	46	19	11	2			
MN	1221	1107	996	806	653	526	418	323	243	178	128	91.3	65.6	47.3	34.5	25.2	18.7	13.7	10.0	7.50			
SD	30.5	23.3	15.5	8.74	6.14	5.14	8.32	10.6	9.38	6.69	3.08	1.47	0.83	0.51	0.41	0.36	0.32	0.18	0.14				
CV	2.50	2.10	1.56	1.08	0.94	0.98	1.99	3.28	3.86	3.76	2.41	1.61	1.27	1.08	1.19	1.43	1.71	1.31	1.40				
1	.85																						
2	.70	.84																					
4	.45	.47	.68																				
6	.46	.44	.60	.82																			
8	.33	.21	.20	.30	.54																		
10	-.01	-.16	-.30	-.25	-.07	.62																	
12	-.33	-.45	-.62	-.53	-.42	.18	.80																
14	-.45	-.50	-.69	-.70	-.59	-.09	.53	.86															
16	-.47	-.51	-.70	-.69	-.53	-.10	.40	.74	.95														
18	-.48	-.50	-.68	-.65	-.47	-.11	.33	.67	.89	.95													
20	-.54	-.52	-.66	-.60	-.47	-.16	.19	.55	.79	.87	.91												
22	-.54	-.48	-.58	-.58	-.44	-.12	.20	.55	.79	.83	.85	.92											
24	-.41	-.34	-.44	-.53	-.39	-.17	.15	.50	.68	.73	.71	.76	.85										
26	-.26	-.16	-.29	-.40	-.33	-.08	.23	.45	.50	.53	.46	.50	.59	.79									
28	-.20	-.10	-.28	-.38	-.37	-.15	.19	.44	.50	.51	.43	.43	.48	.68	.91								
30	-.25	-.20	-.38	-.47	-.54	-.33	.15	.47	.52	.54	.44	.41	.47	.64	.83	.95							
32	-.44	-.38	-.53	-.44	-.60	-.22	.13	.38	.48	.57	.56	.53	.53	.61	.69	.82	.97						
34	-.66	-.38	-.54	-.55	-.74	.06	.24	.48	.58	.68	.67	.64	.64	.63	.71	.87	.97	.98					
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Correlation of Atmospheric Density at Pairs of Levels over WASHINGTON, D. C., in NOVEMBER 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.089	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	.40	.42
NO	180	179	179	179	179	179	178	175	166	159	148	147	135	130	116	93	58	19	8				
MN	1252	1126	1008	811	655	526	417	320	238	174	126	89.8	64.4	46.5	33.7	24.5	18.1	13.2	9.70				
SD	34.1	27.6	19.3	9.31	6.23	7.61	10.4	11.7	8.43	5.49	2.95	1.57	0.99	0.65	0.46	0.34	0.26	0.25	0.27				
CV	2.72	2.45	1.91	1.15	0.95	1.45	2.49	3.66	3.54	3.16	2.34	1.75	1.54	1.40	1.36	1.39	1.44	1.89	2.78				
1	.79																						
2	.59	.82																					
4	.42	.48	.67																				
6	.36	.21	.26	.60																			
8	.20	-.06	-.21	-.09	.45																		
10	.01	-.25	-.47	-.43	.02	.75																	
12	-.23	-.45	-.65	-.55	-.17	.45	.82																
14	-.34	-.56	-.74	-.60	-.22	.32	.65	.89															
16	-.40	-.59	-.70	-.58	-.21	.21	.47	.70	.88														
18	-.34	-.55	-.64	-.54	-.20	.12	.35	.59	.79	.91													
20	-.36	-.52	-.55	-.45	-.17	-.02	.13	.37	.59	.77	.88												
22	-.26	-.39	-.41	-.40	-.18	-.08	-.01	.16	.36	.55	.69	.85											
24	-.25	-.34	-.35	-.27	-.06	-.09	-.07	.07	.24	.42	.57	.75	.85										
26	-.32	-.35	-.30	-.12	-.01	-.16	-.17	-.02	.16	.30	.40	.60	.64	.81									
28	-.32	-.23	-.12	.05	.03	-.13	-.24	-.15	.04	.12	.13	.27	.28	.42	.75								
30	-.15	-.06	.01	.22	.09	-.09	-.24	-.29	-.11	-.02	-.02	.07	.06	.21	.51	.84							
32	-.17	.03	.17	.16	-.18	-.37	-.36	-.32	-.12	-.10	-.10	-.04	-.12	-.01	.48	.84	.96						
24	-.50	-.12	.03	.20	.10	-.43	-.51	-.45	-.23	-.15	-.25	-.10	-.30	-.08	.72	.91	.94	.97					

Correlation of Atmospheric Density at Pairs of Levels over WASHINGTON, D. C., in DECEMBER 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO). Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.089	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	185	185	184	183	183	182	182	179	171	161	146	146	129	117	102	67	33	13	7				
MN	1292	1157	1030	822	660	527	413	310	228	167	122	87.9	63.4	45.8	33.3	24.2	17.7	12.8	9.40				
SD	42.3	32.8	23.1	11.1	7.23	7.91	11.9	12.1	7.02	4.38	2.63	1.61	0.91	0.68	0.66	0.52	0.51	0.37	0.30				
CV	3.27	2.83	2.24	1.35	1.10	1.50	2.88	3.90	3.08	2.62	2.16	1.83	1.44	1.48	1.98	2.15	2.88	2.89	3.19				
1	.77																						
2	.65	.88																					
4	.60	.69	.75																				
6	.43	.34	.30	.67																			
8	.12	-.14	-.25	-.02	.50																		
10	-.11	-.36	-.51	-.39	.08	.73																	
12	-.27	-.49	-.59	-.51	-.10	.43	.83																
14	-.36	-.57	-.65	-.56	-.17	.32	.70	.90															
16	-.38	-.58	-.63	-.58	-.19	.29	.58	.69	.87														
18	-.41	-.58	-.60	-.58	-.26	.18	.39	.53	.74	.91													
20	-.46	-.60	-.60	-.59	-.30	.13	.35	.45	.66	.82	.92												
22	-.45	-.51	-.55	-.46	-.18	.21	.36	.41	.59	.73	.81	.88											
24	-.34	-.33	[illegible]	-.27	-.08	.12	.21	.22	.37	.52	.59	.69	.77										
26	-.25	-.25	[illegible]	-.12	.03	.09	.13	.12	.23	.36	.39	.51	.59	.87									
28	-.33	-.25	-.23	-.10	.07	.11	.16	.13	.19	.29	.31	.45	.58	.81	.52								
30	-.21	-.11	-.07	-.07	.01	-.13	.02	.03	.01	.13	.20	.37	.43	.75	.90	.94							
32	.27	.25	.22	.11	.26	.12	.15	.01	-.13	.05	.07	.18	.33	.69	.89	.94	.98						
34	.47	.31	.30	.26	.47	.59	.62	.52	.07	.03	-.00	.16	.20	.79	.91	.97	.97	.98					
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38																							
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Correlation of Atmospheric Density at Pairs of Levels over TAMPA, Fla., in JANUARY 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.01	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	187	168	166	162	161	160	156	151	140	134	119	116	101	91	78	49	14	1					
MN	1235	1109	995	806	653	527	422	328	246	183	132	91.6	64.4	46.0	33.1	23.9	17.7	12.8					
SD	31.3	21.7	13.3	7.77	5.77	5.74	5.94	7.54	5.86	5.85	3.70	1.82	0.89	0.49	0.48	0.52	0.39						
CV	2.57	1.96	1.34	0.96	0.88	1.09	1.41	2.30	2.38	3.20	2.80	1.99	1.38	1.07	1.45	2.18	2.20						
1	.84																						
2	.71	.86																					
4	.53	.59	.72																				
6	.42	.40	.48	.63																			
8	.20	.12	.16	.20	.58																		
10	-.08	-.24	-.24	-.14	.05	.67																	
12	-.33	-.49	-.55	-.50	-.35	.11	.62																
14	-.51	-.68	-.68	-.57	-.39	.06	.52	.81															
16	-.45	-.65	-.61	-.46	-.30	.07	.44	.59	.83														
18	-.49	-.66	-.62	-.47	-.32	.09	.53	.64	.80	.90													
20	-.46	-.59	-.54	-.52	-.37	.87	.45	.61	.73	.78	.86												
22	-.40	-.48	-.48	-.60	-.44	-.06	.24	.52	.56	.54	.68	.79											
24	-.19	-.25	-.29	-.21	-.12	-.03	.08	.30	.25	.10	.15	.23	.53										
26	.03	.04	.05	.08	-.01	-.07	.00	.05	-.02	-.10	-.14	-.24	.03	.67									
28	.03	.13	.10	.04	-.16	-.09	-.08	-.01	-.18	-.18	-.28	-.38	-.18	.46	.86								
30	-.18	-.07	-.10	-.06	-.10	-.31	-.12	.15	.14	.09	.04	-.15	.09	.67	.82	.90							
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77F-I

Correlation of Atmospheric Density at Pairs of Levels over TAMPA, Fla., in FEBRUARY 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.011	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	171	162	161	155	155	154	152	145	137	127	117	112	101	92	72	43	10	1					
MN	1226	1104	993	805	652	528	421	327	247	184	132	91.2	64.3	46.1	33.2	24.0	17.6	12.9					
SD	33.5	22.8	13.4	7.07	4.89	4.39	5.63	7.12	5.56	5.29	3.37	1.54	0.71	0.50	0.48	0.40	0.38						
CV	2.73	2.07	1.35	0.88	0.75	0.83	1.34	2.18	2.25	2.88	2.55	1.69	1.10	1.08	1.45	1.67	2.16						
1	.87																						
2	.72	.86																					
4	.57	.60	.69																				
6	.47	.42	.48	.61																			
8	.16	.07	.07	.24	.62																		
10	-.23	-.34	-.36	-.14	.17	.62																	
12	-.44	-.52	-.55	-.42	-.09	.25	.67																
14	-.52	-.55	-.61	-.53	-.24	.13	.49	.80															
16	-.59	-.64	-.65	-.50	-.19	.19	.47	.69	.90														
18	-.56	-.62	-.62	-.37	-.15	.25	.49	.65	.83	.92													
20	-.45	-.50	-.48	-.26	-.06	.31	.46	.55	.70	.76	.85												
22	-.33	-.37	-.28	-.14	.02	.43	.46	.41	.45	.49	.60	.74											
24	-.12	-.18	-.12	.05	.14	.43	.37	.24	.21	.25	.30	.50	.67										
26	-.20	-.24	-.13	.03	.05	.48	.48	.40	.35	.39	.42	.60	.68	.81									
28	-.44	-.38	-.07	-.09	-.01	.33	.42	.53	.40	.45	.48	.61	.66	.61	.86								
30	-.49	-.57	.04	-.28	-.37	.01	.42	.48	.68	.64	.49	.55	.71	.70	.85	.92							
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Correlation of Atmospheric Density at Pairs of Levels over TAMPA, Fla., in MARCH 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.011	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	191	179	177	170	167	167	163	159	132	119	106	103	80	70	46	24	7						
MN	1217	1099	991	806	654	528	422	327	246	182	130	91.0	64.3	46.0	33.2	24.1	17.8						
SD	26.5	20.0	13.7	6.79	5.47	4.20	3.74	7.10	6.05	4.48	2.97	1.49	0.87	0.57	0.48	0.28	0.21						
CV	2.18	1.82	1.38	0.84	0.84	0.80	0.89	2.17	2.46	2.46	2.28	1.64	1.35	1.24	1.45	1.16	1.18						
1	.82																						
2	.67	.85																					
4	.51	.58	.71																				
6	.44	.50	.58	.75																			
8	.36	.32	.37	.54	.68																		
10	-.03	-.18	-.22	-.12	-.04	.24																	
12	-.54	-.60	-.55	-.49	-.53	-.43	.37																
14	-.56	-.70	-.64	-.57	-.62	-.50	.23	.82															
16	-.50	-.61	-.58	-.54	-.54	-.42	.23	.69	.86														
18	-.47	-.64	-.59	-.55	-.55	-.44	.17	.63	.78	.90													
20	-.48	-.65	-.59	-.56	-.57	-.50	-.04	.54	.69	.78	.88												
22	-.40	-.48	-.44	-.49	-.38	-.45	-.03	.46	.54	.65	.69	.79											
24	-.32	-.32	-.27	-.28	-.18	-.40	-.12	.31	.31	.39	.44	.62	.86										
26	-.15	-.11	-.16	-.16	-.10	-.31	-.22	.18	.11	.12	.18	.33	.60	.75									
28	-.03	-.06	.05	.04	-.07	-.36	-.33	.17	.10	.15	.07	.13	.27	.33	.67								
30	.31	.22	.56	.61	.42	.34	-.38	-.17	-.18	-.32	-.24	-.49	-.54	-.66	-.02	.61							
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Correlation of Atmospheric Density at Pairs of Levels over TAMPA, Fla., in APRIL 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.011	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	185	177	176	171	169	167	164	160	147	135	123	117	111	94	67	29	5						
MN	1195	1087	984	803	654	529	423	331	249	184	132	91.7	64.7	46.5	33.6	24.3	17.9						
SD	19.8	14.1	9.12	5.58	4.71	3.88	3.86	4.28	4.59	3.22	2.27	1.14	0.62	0.41	0.38	0.40	0.23						
CV	1.66	1.30	0.93	0.69	0.72	0.73	0.91	1.29	1.84	1.75	1.72	1.24	0.96	0.88	1.13	1.65	1.28						
1	.79																						
2	.50	.79																					
4	.31	.40	.52																				
6	.38	.42	.47	.72																			
8	.20	.23*	.37	.47	.68																		
10	-.11	-.08	.20	.30	.30	.68																	
12	-.27	-.21	-.03	-.05	-.20	.09	.54																
14	-.24	-.33	-.29	-.34	-.52	-.37	-.02	.53															
16	-.26	-.40	-.30	-.34	-.45	-.29	.06	.30	.66														
18	-.37	-.47	-.32	-.38	-.48	-.23	.17	.31	.44	.69													
20	-.35	-.44	-.31	-.43	-.42	-.08	.21	.30	.44	.66	.76												
22	-.24	-.26	-.12	-.23	-.15	.15	.37	.42	.33	.32	.33	.58											
24	-.22	-.23	-.09	-.16	-.04	.18	.22	.18	.14	.18	.28	.54	.64										
26	-.18	-.24	-.18	-.24	-.05	.04	-.00	-.03	.17	.11	.30	.50	.51	.75									
28	-.27	-.45	-.38	-.47	-.31	.05	.04	.04	.22	.13	.51	.66	.50	.73	.86								
30	.37	.06	.11	-.60	.26	.33	-.10	.05	-.49	.25	.68	.99	.23	.82	.90	.91							
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Correlation of Atmospheric Density at Pairs of Level over TAMPA, Fla., in MAY 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO). Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.011	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	187	177	177	176	174	173	171	170	160	155	136	129	119	98	62	19	4						
MN	1183	1078	979	801	651	527	423	333	253	186	132	92.2	65.2	46.9	34.1	24.8	18.4						
SD	17.0	10.1	6.97	4.36	3.58	3.27	2.93	4.23	5.66	4.09	2.27	1.04	0.61	0.46	0.36	0.34	0.06						
CV	1.44	0.94	0.71	0.54	0.55	0.62	0.69	1.27	2.24	2.20	1.72	1.13	0.94	0.98	1.06	1.37	0.33						
1	.69																						
2	.36	.67																					
4	.25	.20	.40																				
6	.40	.35	.45	.65																			
8	.34	.30	.41	.41	.65																		
10	.21	.06	.22	.28	.38	.68																	
12	-.17	-.33	-.13	-.03	-.13	-.03	.52																
14	-.33	-.53	-.32	-.27	-.45	-.40	-.03	.70															
16	-.33	-.61	-.50	-.37	-.47	-.36	.00	.51	.78														
18	-.22	-.53	-.50	-.34	-.45	-.44	-.14	.38	.69	.87													
20	-.27	-.42	-.36	-.37	-.37	-.35	-.26	.26	.55	.66	.71												
22	-.26	-.40	-.31	-.29	-.35	-.29	-.21	.25	.45	.46	.45	.66											
24	-.16	-.25	-.39	-.33	-.32	-.30	-.26	.10	.31	.39	.41	.51	.71										
26	-.12	-.24	-.43	-.31	-.37	-.30	-.29	.02	.19	.25	.22	.27	.46	.71									
28	-.32	-.51	-.60	-.27	-.18	-.25	-.85	.85	.37	.23	.38	.32	.39	.45	.84								
30	.90	-.53	-.78	.16	.98	.24	.67	.06	.56	.82	.70	.41	.22	.43	.26	.43							
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Correlation of Atmospheric Density at Pairs of Level over TAMPA, Fla., in JUNE 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.011	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	182	170	165	162	159	158	155	155	152	144	130	127	120	106	66	24	4						
MN	1170	1071	974	798	648	524	422	335	257	189	134	93.4	66.2	47.6	34.8	25.6	19.2						
SD	13.5	6.31	5.01	3.73	2.73	2.63	2.17	2.14	4.21	3.72	2.20	1.18	0.94	0.71	0.51	0.47	0.16						
CV	1.15	0.59	0.51	0.47	0.42	0.50	0.51	0.64	1.64	1.97	1.64	1.26	1.42	1.49	1.47	1.84	0.83						
1	.58																						
2	.23	.65																					
4	.15	.34	.64																				
6	.31	.32	.51	.62																			
8	.25	.38	.49	.48	.65																		
10	.25	.45	.48	.39	.49	.81																	
12	.09	.16	.14	.05	.10	.18	.38																
14	-.53	-.20	-.18	-.08	-.24	-.23	-.13	.62															
16	-.09	-.33	-.43	-.35	-.35	-.33	-.21	.41	.72														
18	-.08	-.28	-.48	-.34	-.20	-.17	-.09	.25	.33	.72													
20	.01	-.35	-.45	-.36	-.12	-.10	-.09	.25	.34	.64	.78												
22	-.10	-.38	-.41	-.21	-.07	-.06	-.01	.41	.45	.63	.66	.82											
24	.05	-.30	-.38	-.24	.04	-.02	-.07	.40	.44	.55	.56	.69	.81										
26	.26	-.27	-.38	-.30	.02	.01	.06	.43	.44	.55	.59	.78	.77	.88									
28	.31	-.16	-.47	-.33	.30	.11	.15	.43	.45	.57	.59	.80	.76	.75	.91								
30	-.96	-.13	-.27	-.00	.59	-.01	.66	.67	.59	-.09	.39	-.19	-.34	-.35	-.02	.92							
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Correlation of Atmospheric Density at Pairs of Levels over TAMPA, Fla., in JULY 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.011	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	186	166	165	160	154	153	152	151	147	138	131	127	121	110	70	35	4						
MN	1170	1068	972	798	648	525	423	337	261	191	134	94.2	67.2	48.3	35.1	25.8	19.2						
SD	10.9	5.33	4.11	3.53	2.91	2.71	2.32	1.70	2.65	3.07	1.54	0.93	0.73	0.58	0.51	0.40	0.31						
CV	0.93	0.50	0.42	0.44	0.45	0.52	0.55	0.50	1.02	1.61	1.15	0.99	1.09	1.20	1.45	1.55	1.61						
1	.57																						
2	.33	.84																					
4	.21	.55	.71																				
6	.31	.55	.66	.80																			
8	.27	.49	.61	.63	.77																		
10	.27	.46	.55	.59	.69	.87																	
12	.09	.09	.14	.14	.23	.41	.58																
14	-.16	-.36	-.42	-.47	-.45	-.38	-.28	.45															
16	-.41	-.70	-.69	-.64	-.60	-.47	-.46	-.02	.54														
18	-.20	-.51	-.55	-.49	-.46	-.22	-.21	.10	.38	.66													
20	-.25	-.48	-.38	-.29	-.26	-.14	-.13	.21	.35	.51	.50												
22	-.29	-.62	-.52	-.40	-.33	-.11	-.16	.20	.45	.54	.57	.62											
24	-.28	-.63	-.67	-.55	-.43	-.22	-.20	.23	.53	.64	.61	.56	.72										
26	-.26	-.74	-.75	-.66	-.58	-.41	-.27	.16	.61	.78	.73	.65	.70	.78									
28	-.11	-.70	-.77	-.59	-.48	-.31	-.10	.26	.62	.77	.70	.76	.73	.77	.89								
30	-.93	-.95	-.93	-.18	-.17	-.41	-.04	.90	.93	.75	.54	.97	.89	.90	.88	.95							
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Correlation of Atmospheric Density at Pairs of Level over TAMPA, Fla., in AUGUST 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.011	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	188	175	172	168	166	163	161	159	157	151	145	144	140	133	89	39	8						
MN	1170	1067	971	796	647	524	422	337	260	191	134	94.5	67.5	48.6	35.3	26.0	19.4						
SD	12.9	5.28	4.19	3.58	3.09	2.60	1.98	1.88	3.01	2.14	1.32	0.86	0.67	0.56	0.41	0.39	0.19						
CV	1.10	0.49	0.43	0.45	0.48	0.50	0.47	0.56	1.16	1.12	0.99	0.91	0.99	1.15	1.16	1.50	0.98						
1	.66																						
2	.48	.78																					
4	.41	.55	.69																				
6	.32	.41	.60	.68																			
8	.29	.26	.43	.53	.73																		
10	.24	.20	.45	.50	.61	.76																	
12	-.00	-.04	.11	.10	.10	.03	.38																
14	-.22	-.31	-.33	-.38	-.38	-.44	-.25	.50															
16	-.37	-.51	-.51	-.47	-.44	-.37	-.32	.10	.56														
18	-.06	-.14	.02	-.10	.03	.01	-.04	.08	.23	.38													
20	-.10	-.08	.05	.08	.08	.00	-.03	.14	.17	.22	.55												
22	-.21	-.21	-.05	-.10	-.01	-.10	-.19	.01	.18	.18	.50	.68											
24	-.20	-.28	-.14	-.15	-.08	-.11	-.24	.06	.20	.24	.53	.54	.68										
26	-.21	-.21	-.01	.07	.13	-.01	-.07	.13	.19	.25	.59	.71	.75	.85									
28	-.25	-.34	-.16	-.02	.00	-.06	-.13	.09	.28	.39	.67	.76	.79	.72	.34								
30	-.17	-.07	.47	.10	-.42	-.24	-.38	-.18	-.57	-.20	.18	.74	.25	.39	.37	.90							
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Correlation of Atmospheric Density at Pairs of Levels over TAMPA, Fla., in SEPTEMBER 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.011	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	188	184	183	180	175	175	175	171	160	137	124	119	114	101	78	53	11						
MN	1171	1066	970	795	646	523	421	336	260	192	134	93.9	67.0	48.1	35.0	25.6	19.0						
SD	11.9	5.77	5.58	4.69	4.60	3.81	3.16	2.29	2.31	2.73	1.46	0.85	0.70	0.53	0.37	0.29	0.17						
CV	1.02	0.54	0.58	0.59	0.71	0.73	0.75	0.68	0.89	1.42	1.09	0.91	1.04	1.10	1.06	1.13	0.89						
1	.68																						
2	.41	.82																					
4	.37	.69	.83																				
6	.40	.70	.81	.83																			
8	.35	.66	.78	.73	.86																		
10	.37	.63	.73	.72	.78	.89																	
12	.26	.48	.60	.64	.67	.72	.84																
14	-.24	-.23	-.22	-.07	-.06	-.11	-.03	.29															
16	-.30	-.47	-.54	-.47	-.41	-.45	-.53	-.29	.55														
18	-.25	-.41	-.44	-.35	-.36	-.39	-.46	-.24	.28	.66													
20	-.20	-.38	-.30	-.20	-.28	-.38	-.34	-.05	.24	.44	.48												
22	-.28	-.36	-.26	-.18	-.27	-.45	-.36	-.15	.14	.38	.40	.72											
24	-.27	-.24	-.15	-.12	-.27	-.42	-.43	-.18	.18	.36	.35	.57	.70										
26	-.17	-.29	-.17	-.11	-.22	-.23	-.29	-.16	-.05	.34	.33	.63	.65	.72									
28	-.04	-.08	.01	-.08	-.17	-.24	-.34	-.40	-.29	.05	.19	.55	.61	.62	.78								
30	-.29	-.46	-.40	-.48	-.56	-.46	-.60	-.65	-.25	.56	.23	.73	.46	.74	.74	.94							
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Correlation of Atmospheric Density at Pairs of Levels over TAMPA, Fla., in OCTOBER 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.011	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	195	188	187	184	182	179	176	173	156	127	116	110	104	87	78	60	9						
MN	1182	1074	975	796	647	524	421	335	258	190	133	92.9	66.0	47.4	34.5	25.2	18.6						
SD	17.8	9.51	6.83	4.25	3.77	3.18	2.94	3.47	4.52	3.77	1.86	0.98	0.76	0.58	0.44	0.36	0.29						
CV	1.51	0.89	0.70	0.53	0.58	0.59	0.70	1.04	1.75	1.98	1.40	1.05	1.15	1.22	1.28	1.43	1.56						
1	.80																						
2	.57	.76																					
4	.14	.19	.44																				
6	.11	.22	.37	.69																			
8	.16	.31	.42	.43	.74																		
10	.02	.10	.19	.34	.54	.71																	
12	-.29	-.36	-.30	.02	.07	.07	.58																
14	-.40	-.56	-.59	-.30	-.27	-.27	.09	.74															
16	-.22	-.46	-.55	-.46	-.33	-.22	.04	.50	.78														
18	-.12	-.31	-.32	-.37	-.31	-.16	.01	.20	.35	.72													
20	-.27	-.36	-.26	-.22	-.20	-.19	-.13	.08	.26	.46	.53												
22	-.46	-.41	-.24	.03	-.13	-.26	-.27	.03	.23	.17	.11	.62											
24	-.35	-.29	-.09	.01	-.08	-.09	-.14	.09	.19	.15	.05	.50	.70										
26	-.38	-.38	-.18	.01	-.15	-.17	-.14	.15	.24	.19	.09	.42	.68	.80									
28	-.24	-.28	.03	.13	.09	-.03	-.10	.04	.08	.07	-.03	.29	.57	.77	.90								
30	-.17	-.18	-.01	.51	.33	.44	.36	.11	-.15	-.11	.27	.12	.45	.59	.93	.93							
32																							
34																							
36																							
38																							
40																							
42																							

Correlation of Atmospheric Density at Pairs of Levels over TAMPA, Fla., in NOVEMBER 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean).
Body of table lists correlations between densities at levels indicated at top and along left side.

KM	011	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	182	173	171	170	167	164	163	159	152	135	122	121	112	101	85	66	10	1	1				
MN	1202	1086	932	799	650	527	424	336	256	189	134	93.0	65.4	46.8	33.9	24.6	18.2	13.5	9.90				
SD	21.9	13.4	7.52	4.43	4.10	4.05	3.23	3.11	4.44	3.42	2.21	1.41	0.87	0.64	0.49	0.37	0.29						
CV	1.82	1.23	0.77	0.55	0.63	0.77	0.76	0.93	1.73	1.81	1.65	1.52	1.33	1.37	1.45	1.50	1.59						
1	.80																						
2	.41	.64																					
4	.28	.32	.43																				
6	.37	.42	.52	.61																			
8	.16	.22	.46	.44	.73																		
10	-.06	-.05	.27	.24	.46	.79																	
12	-.33	-.35	-.12	-.33	-.23	.09	.49																
14	-.32	-.34	-.32	-.58	-.58	-.46	-.15	.53															
16	-.23	-.28	-.29	-.59	-.62	-.61	-.41	.27	.79														
18	-.17	-.17	.03	-.26	-.29	-.22	-.03	.27	.44	.60													
20	-.21	-.19	-.01	-.29	-.33	-.28	-.06	.34	.52	.60	.86												
22	-.14	-.11	-.09	-.23	-.33	-.35	-.23	.20	.55	.66	.58	.68											
24	-.15	-.06	.09	-.05	-.33	-.33	-.19	.15	.47	.52	.40	.52	.77										
26	-.12	-.08	.13	.03	-.39	-.35	-.20	.16	.39	.48	.31	.38	.66	.85									
28	.03	.05	.15	-.15	-.38	-.37	-.30	.03	.23	.34	.21	.21	.34	.61	.78								
30	.57	.73	.62	.16	.05	-.25	-.52	-.48	-.13	.14	-.10	-.18	.71	.72	.84	.90							
32																							
34																							
36																							
38																							
40																							
42																							

Correlation of Atmospheric Density at Pairs of Level over TAMPA, Fla., in DECEMBER 1958-1960

First five lines indicate level (KM) in kilometers above sea level, number of observations (NO), Mean (MN) and standard deviation (SD) in grams per cubic meter and coefficient of variation (CV) in percent (i.e., standard deviation expressed as percentage of mean). Body of table lists correlations between densities at levels indicated at top and along left side.

KM	.011	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
NO	185	173	173	167	167	165	162	158	148	139	121	116	103	94	80	52	11	1	1				
MN	1232	1107	995	805	654	529	423	332	250	184	132	91.9	64.4	46.1	33.4	24.2	17.9	12.8	9.50				
SD	28.1	16.6	11.3	6.21	4.71	3.83	3.82	5.59	5.46	3.49	2.51	1.42	0.71	0.39	0.40	0.29	0.22						
CV	2.28	1.50	1.14	0.77	0.72	0.72	0.90	1.68	2.18	1.90	1.90	1.55	1.10	0.85	1.20	1.20	1.23						
1	.79																						
2	.59	.73																					
4	.37	.41	.63																				
6	.36	.37	.56	.68																			
8	.18	.11	.23	.25	.63																		
10	-.16	-.29	-.13	-.10	.08	.50																	
12	-.34	-.41	-.32	-.35	-.25	.02	.65																
14	-.38	-.45	-.48	-.55	-.49	-.23	.29	.72															
16	-.28	-.36	-.41	-.46	-.47	-.25	.14	.43	.73														
18	-.28	-.35	-.41	-.43	-.55	-.38	.08	.32	.63	.83													
20	-.27	-.23	-.36	-.37	-.48	-.32	.14	.35	.59	.69	.85												
22	-.21	-.22	-.24	-.14	-.15	-.04	.22	.38	.50	.37	.48	.60											
24	-.13	-.04	.02	-.02	-.08	-.02	.22	.29	.34	.36	.48	.64	.59										
26	.09	.15	.20	.10	-.04	-.19	-.13	-.02	.11	.20	.39	.48	.33	.65									
28	.02	.14	.10	-.05	-.10	-.09	-.24	-.06	-.03	.15	.23	.26	.04	.34	.60								
30	-.07	-.31	-.10	.02	-.02	-.04	.15	.08	.12	.21	.12	.03	.07	.19	.66	.79							

Appendix II

Multiple regression constants, coefficients, and correlations of atmospheric density on two wind components, by months and seasons, at the 10, 12, 14, and 16-km levels, over each of nine stations (arranged in order of decreasing latitude).

Regression of air density (ρ, g/m^3), $\rho = a + b\,u + c\,v$,
on west-east (u) and south-north (v) wind speeds (knots),
with means ($\bar{\rho}$, $\bar{u}$, $\bar{v}$), standard deviations (s_ρ, s_u, s_v),
and number (N) of observations.

THULE, GREENLAND, JAN 1948 - SEP 1957

	a	b	c	R	S	$\bar{\rho}$	$\bar{u}$	$\bar{v}$	s_ρ	s_u	s_v	N
10 km												
JAN	375	+.079	+.048	.16	13.0	376	+ 3.1	+ 7.7	13.2	25.3	17.5	490
FEB	374	+.264	+.135	.41	14.6	378	+ 5.3	+19.4	16.0	23.0	20.1	475
MAR	370	+.229	+.015	.28	13.1	372	+ 9.4	+ 8.7	13.7	17.1	19.8	590
APR	374	+.158	-.142	.26	14.1	375	+ 7.2	+ 3.3	14.6	17.1	16.3	608
MAY	381	+.086	+.003	.12	13.1	382	+ 6.3	+ 6.1	13.2	18.1	15.6	664
JUN	395	+.137	-.087	.21	15.7	395	+ 3.0	+ 3.6	16.1	20.2	20.3	681
JUL	401	-.043	-.041	.09	14.6	401	+ 6.7	- 2.2	14.7	18.8	22.9	713
AUG	403	+.028	-.042	.08	13.8	403	+ 7.4	- 1.0	13.8	22.7	23.7	789
SEP	390	+.162	+.049	.23	14.3	391	+ 6.1	+ 1.5	14.7	21.0	21.2	663
OCT	377	+.165	+.144	.45	11.8	381	+10.8	+12.4	13.2	27.9	22.0	615
NOV	374	+.150	+.060	.25	10.7	376	+ 5.1	+ 9.5	11.1	17.6	17.7	561
DEC	374	+.196	+.085	.31	13.4	376	+ 2.0	+10.1	14.1	22.7	15.6	554
WIN	375	+.175	+.095	.30	13.8	376	+ 3.4	+12.2	14.5	23.7	18.4	1519
SPG	376	+.134	-.046	.18	14.1	377	+ 7.6	+ 6.0	14.4	17.5	17.4	1862
SMR	400	+.059	-.074	.13	15.1	400	+ 5.8	+ 0.0	15.2	20.8	22.6	2183
AUT	381	+.161	+.025	.26	14.1	383	+ 7.4	+ 7.6	14.6	22.8	21.0	1839
12 km												
JAN	272	+.037	+.028	.10	7.5	272	+ 6.1	+ 4.3	7.6	20.2	14.9	392
FEB	271	+.217	+.086	.52	7.3	274	+ 5.1	+17.2	8.6	19.9	15.4	394
MAR	270	+.161	-.009	.30	7.9	272	+ 9.9	+ 6.7	8.3	15.1	16.5	520
APR	273	+.182	-.141	.42	7.0	274	+ 7.1	+ 3.1	7.8	13.9	13.4	554
MAY	280	-.004	-.045	.07	6.6	280	+ 4.5	+ 4.3	6.6	12.4	10.3	600
JUN	289	+.132	-.131	.25	9.7	289	+ 1.9	+ 2.6	10.0	12.2	12.8	614
JUL	291	+.014	-.111	.16	8.5	292	+ 4.5	- 2.3	8.6	11.2	12.3	635
AUG	291	+.023	-.154	.23	8.9	292	+ 5.3	- 1.5	9.2	12.1	13.5	719
SEP	282	+.172	+.081	.33	6.9	283	+ 5.7	+ 1.5	7.3	13.7	13.7	617
OCT	274	+.174	+.116	.55	6.4	277	+11.3	+ 8.2	7.7	20.9	15.0	572
NOV	272	+.122	+.022	.30	5.8	274	+ 7.3	+ 6.8	6.1	14.7	14.8	514
DEC	273	+.183	-.025	.33	9.9	274	+ 3.8	+ 8.4	10.5	18.7	12.0	469
WIN	272	+.147	+.045	.32	8.6	273	+ 4.9	+ 9.9	9.1	19.6	15.0	1255
SPG	275	+.074	-.079	.20	8.1	275	+ 7.0	+ 4.7	8.2	13.9	13.6	1674
SMR	290	+.067	-.153	.23	9.1	291	+ 4.0	- 0.5	9.4	11.9	13.1	1968
AUT	277	+.144	+.024	.31	7.7	278	+ 8.1	+ 5.3	8.1	16.9	14.8	1703

Regression of air density (ρ, g/m^3), $\rho = a + b\,u + c\,v$, on west-east (u) and south-north (v) wind speeds (knots), with means ($\bar{\rho}$, $\bar{u}$, $\bar{v}$), standard deviations (s_ρ, s_u, s_v), and number (N) of observations.

THULE, GREENLAND, JAN 1948 - SEP 1957

	a	b	c	R	S	$\bar{\rho}$	$\bar{u}$	$\bar{v}$	s_ρ	s_u	s_v	N
14 km												
JAN	198	+.053	+.015	.24	3.9	199	+10.2	+ 1.0	4.0	18.1	17.8	238
FEB	199	+.141	+.027	.54	3.9	200	+ 3.7	+13.9	4.7	18.3	15.3	277
MAR	200	+.064	-.022	.21	5.1	200	+ 9.9	+ 4.1	5.2	14.7	16.5	430
APR	203	+.111	-.099	.43	4.4	204	+ 6.3	+ 2.4	4.8	12.9	13.2	520
MAY	208	-.031	-.004	.08	4.2	208	+ 3.2	+ 3.2	4.2	10.6	8.9	538
JUN	214	+.035	-.021	.07	5.4	214	+ 0.8	+ 1.5	5.4	8.6	9.2	575
JUL	216	-.060	+.003	.10	4.4	216	+ 2.5	- 1.9	4.4	7.6	7.6	563
AUG	215	-.006	-.134	.27	4.4	215	+ 3.1	- 1.4	4.6	8.2	9.4	662
SEP	209	+.103	+.047	.25	4.0	209	+ 4.8	+ 1.3	4.1	10.1	11.2	550
OCT	203	+.151	+.069	.50	4.3	205	+11.2	+ 5.5	5.0	16.2	12.2	516
NOV	201	+.085	+.042	.34	3.7	202	+ 9.2	+ 5.0	4.0	13.9	14.9	457
DEC	201	+.016	-.052	.13	5.6	200	+ 4.5	+ 6.9	5.7	17.2	12.3	374
WIN	199	+.063	+.006	.22	4.9	200	+ 5.8	+ 7.5	5.0	18.0	15.6	889
SPG	205	-.001	-.064	.15	5.6	204	+ 6.2	+ 3.2	5.7	13.0	13.0	1488
SMR	215	-.006	-.075	.14	4.8	215	+ 2.2	- 0.6	4.9	8.2	8.9	1800
AUT	205	+.078	+.012	.20	5.3	206	+ 8.3	+ 3.8	5.4	13.8	12.9	1523
16 km												
JAN	145	+.046	+.022	.35	2.7	146	+11.2	- 1.8	2.9	18.2	19.5	155
FEB	146	+.090	-.017	.60	2.6	146	+ 3.1	+15.3	3.2	19.6	19.5	194
MAR	148	+.007	+.040	.21	3.7	148	+ 9.6	+ 1.8	3.8	15.9	18.3	364
APR	151	+.059	+.079	.41	2.8	152	+ 5.7	+ 1.1	3.1	12.1	12.5	456
MAY	154	-.045	-.020	.14	2.9	154	+ 1.7	+ 2.6	3.0	9.4	8.3	484
JUN	159	+.041	+.033	.09	3.8	159	- 0.1	+ 0.9	3.8	6.6	7.5	516
JUL	161	-.068	+.062	.17	2.9	161	+ 0.2	- 1.1	2.9	5.9	5.4	511
AUG	159	-.054	-.091	.25	2.8	159	+ 1.4	- 1.1	2.9	6.3	7.3	612
SEP	154	+.056	+.012	.17	2.8	155	+ 4.9	+ 1.5	2.8	8.7	9.8	493
OCT	151	+.086	+.041	.43	2.8	152	+13.6	+ 5.9	3.1	15.6	10.3	415
NOV	148	+.076	+.043	.45	2.6	149	+11.6	+ 2.7	2.9	14.6	17.1	376
DEC	147	-.021	-.050	.20	3.0	147	+ 4.4	+ 5.9	3.1	18.8	13.1	283
WIN	147	+.029	-.024	.26	3.0	147	+ 5.7	+ 6.9	3.1	19.2	18.1	632
SPG	152	-.040	-.056	.19	4.0	152	+ 5.3	+ 1.8	4.1	12.9	13.2	1304
SMR	160	-.031	-.024	.08	3.3	160	+ 0.6	- 0.5	3.3	6.3	6.9	1639
AUT	152	+.032	+.019	.13	3.7	152	+ 9.7	+ 3.3	3.8	13.6	12.7	1284

Regression of air density (ρ, g/m^3), $\rho = a + b\,u + c\,v$,

on west-east (u) and south-north (v) wind speeds (knots),

with means ($\bar{\rho}$, $\bar{u}$, $\bar{v}$), standard deviations (s_ρ, s_u, s_v),

and number (N) of observations.

SHEMYA ISLAND, ALASKA, JAN 1948 - JUN 1949, JAN 1949 - JUN 1954

	a	b	c	R	S	$\bar{\rho}$	$\bar{u}$	$\bar{v}$	s_ρ	s_u	s_v	N
10 km												
JAN	387	-.060	+.045	.14	14.9	387	+12.5	+15.9	15.0	30.8	28.9	181
FEB	383	+.021	+.017	.06	10.7	383	+ 8.8	+13.8	10.7	25.7	23.8	201
MAR	390	+.177	-.086	.31	16.3	393	+23.4	+12.4	17.1	26.5	22.2	137
APR	398	-.037	-.120	.16	16.4	397	+17.9	- 0.3	16.6	22.1	21.4	233
MAY	395	+.014	+.005	.03	15.7	395	+19.4	+ 1.9	15.7	26.5	24.4	317
JUN	404	+.029	+.029	.10	13.1	404	+ 8.3	+ 5.9	13.2	29.2	32.0	248
JUL	414	-.008	-.116	.39	7.5	414	+15.6	- 7.8	8.1	30.4	26.9	248
AUG	414	-.028	-.035	.18	7.5	413	+26.0	+ 4.1	7.6	26.1	33.2	244
SEP	413	-.031	-.063	.21	9.5	413	+29.7	- 3.6	9.7	31.6	27.9	248
OCT	393	+.087	-.041	.26	12.5	396	+33.7	+ 0.7	12.9	33.9	26.5	116
NOV	379	+.093	+.020	.23	13.4	382	+30.7	+ 9.0	13.8	33.2	22.7	99
DEC	379	+.113	+.011	.21	15.0	382	+29.0	+ 8.9	15.4	28.9	24.8	157
WIN	384	+.007	+.034	.07	13.8	384	+15.9	+13.1	13.8	29.7	26.1	539
SPG	395	+.037	-.064	.11	16.3	396	+19.7	+ 3.2	16.4	25.2	23.5	687
SMR	410	+.026	-.052	.16	10.8	411	+16.6	+ 0.7	10.9	29.5	31.4	740
AUT	401	+.014	-.131	.21	16.7	402	+30.9	+ 0.2	17.1	32.6	27.0	463
12 km												
JAN	278	-.072	+.110	.29	10.1	279	+12.8	+15.9	10.5	26.1	23.0	137
FEB	274	+.022	+.031	.10	6.6	275	+11.4	+13.0	6.6	19.0	15.4	145
MAR	282	+.320	-.112	.47	12.4	286	+16.8	+11.6	14.1	18.8	14.8	84
APR	291	-.082	-.295	.30	12.9	289	+17.4	+ 1.9	13.6	16.5	13.6	155
MAY	286	+.105	+.082	.21	10.6	288	+17.6	+ 2.6	10.8	17.8	15.5	241
JUN	298	+.112	+.082	.21	14.3	299	+ 7.9	+ 3.6	14.6	20.0	23.9	195
JUL	315	+.051	-.084	.18	12.2	316	+18.1	-10.2	12.4	25.4	23.9	170
AUG	316	+.025	+.024	.07	13.8	317	+25.4	+ 8.4	13.8	24.7	33.3	181
SEP	305	+.101	-.050	.25	12.7	309	+36.4	- 5.0	13.1	29.9	27.9	192
OCT	284	+.087	+.033	.37	6.6	287	+33.8	+ 3.3	7.1	28.9	18.7	79
NOV	275	+.080	-.077	.30	7.6	277	+34.7	+ 9.3	8.0	26.6	15.6	76
DEC	273	+.055	-.022	.14	8.7	274	+28.5	+ 9.6	8.8	21.7	17.5	125
WIN	275	-.019	+.065	.15	8.9	276	+17.1	+12.9	9.0	23.7	19.0	407
SPG	287	+.104	-.071	.18	12.2	288	+17.4	+ 3.9	12.4	17.6	15.2	480
SMR	308	+.143	-.008	.22	15.6	310	+16.9	+ 0.9	16.0	24.5	28.4	546
AUT	293	+.115	-.175	.30	16.9	297	+35.4	+ 0.0	17.7	29.0	24.5	347

Regression of air density (ρ, g/m^3), $\rho = a + b\,u + c\,v$, on west-east (u) and south-north (v) wind speeds (knots), with means ($\bar{\rho}$, $\bar{u}$, $\bar{v}$), standard deviations (s_ρ, s_u, s_v), and number (N) of observations.

SHEMYA ISLAND, ALASKA, JAN 1948 - JUN 1949, JAN 1951 - JUN 1954

	a	b	c	R	S	$\bar{\rho}$	$\bar{u}$	$\bar{v}$	s_ρ	s_u	s_v	N
14 km												
JAN	204	-.074	+.078	.35	6.0	204	+13.9	+15.5	6.4	23.1	19.8	103
FEB	202	-.032	-.044	.19	4.5	201	+13.3	+12.2	4.6	17.9	14.1	108
MAR	211	+.017	-.154	.33	6.1	209	+11.7	+14.3	6.5	15.7	13.4	49
APR	214	-.119	-.200	.35	6.9	212	+14.0	+ 1.9	7.3	13.3	10.6	116
MAY	213	-.008	+.093	.19	5.9	213	+13.4	+ 3.0	6.0	14.4	12.5	195
JUN	218	+.024	+.127	.21	7.8	219	+ 4.4	+ 4.1	8.0	15.2	13.1	145
JUL	231	+.053	-.061	.23	5.8	232	+13.0	- 7.2	6.0	18.2	19.1	134
AUG	234	+.019	+.050	.12	10.0	234	+19.2	+ 3.6	10.1	18.1	22.4	135
SEP	223	+.134	-.044	.32	8.6	227	+27.6	- 5.3	9.0	19.5	20.9	128
OCT	211	+.033	+.019	.23	3.7	212	+34.2	+ 3.6	3.8	28.0	17.6	63
NOV	204	+.025	-.038	.16	5.3	205	+31.9	+11.1	5.4	24.1	18.2	55
DEC	199	+.032	-.062	.21	5.6	200	+31.8	+11.0	5.8	17.0	17.9	97
WIN	203	-.056	+.014	.20	5.8	202	+19.3	+12.9	5.9	21.3	17.5	308
SPG	212	-.006	-.051	.10	6.7	212	+13.4	+ 4.2	6.7	14.3	12.7	360
SMR	226	+.142	-.018	.25	10.2	228	+12.0	+ 0.3	10.6	18.3	19.2	414
AUT	218	+.010	-.188	.33	11.3	218	+30.2	+ 0.6	12.0	23.2	20.6	246
16 km												
JAN	151	-.080	+.059	.43	4.1	151	+11.7	+15.8	4.5	21.2	16.4	72
FEB	149	-.056	-.018	.35	2.6	148	+13.7	+11.8	2.7	15.8	11.8	77
MAR	155	-.045	-.051	.31	3.1	154	+10.7	+12.7	3.3	18.9	13.9	31
APR	158	-.073	-.076	.22	4.7	157	+11.2	+ 3.5	4.9	11.6	9.9	86
MAY	157	+.031	+.152	.37	3.8	158	+ 8.7	+ 3.2	4.0	9.8	9.6	153
JUN	161	-.057	+.171	.39	4.4	161	+ 2.5	+ 4.2	4.8	9.1	10.8	101
JUL	170	+.086	-.047	.44	2.7	171	+ 8.9	- 5.1	3.0	14.1	12.7	107
AUG	173	-.065	+.021	.14	6.0	172	+13.2	+ 3.0	6.1	11.6	16.0	112
SEP	165	+.029	-.022	.13	5.4	166	+23.2	- 4.9	5.4	17.0	16.9	106
OCT	155	+.021	-.002	.19	2.5	156	+31.0	+ 3.9	2.6	23.1	13.8	47
NOV	149	+.043	+.002	.27	3.7	151	+31.7	+ 9.2	3.8	24.4	15.6	34
DEC	146	+.036	-.030	.24	3.8	147	+37.0	+13.9	3.9	19.3	19.6	80
WIN	150	-.056	+.005	.30	4.0	148	+21.2	+13.8	4.2	22.1	16.4	229
SPG	157	-.025	+.011	.07	4.4	157	+ 9.7	+ 4.4	4.4	11.8	10.7	270
SMR	167	+.134	-.021	.25	6.6	168	+ 8.4	+ 0.7	6.8	12.6	14.0	320
AUT	161	-.031	-.145	.32	7.5	161	+26.7	- 0.1	7.9	20.6	16.9	187

Regression of air density (ρ, g/m^3), $\rho + a + b\,u + c\,v$,

on west-east (u) and south-north (v) wind speeds (knots),

with means ($\bar{\rho}$, $\bar{u}$, $\bar{v}$), standard deviations (s_ρ, s_u, s_v),

and number (N) of observations.

WIESBADEN, GERMANY, 948 - JAN 1951, SEP, DEC 1951, JAN, APR,

MAY, JUL 1952 - DEC 1, Less MAY 1950

	a	b	c	r	S	$\bar{\rho}$	$\bar{u}$	$\bar{v}$	s_ρ	s_u	s_v	N
10 km												
JAN	408	+.012	-.066	.1[illegible]	12.8	410	+17.4	-21.6	13.0	35.6	34.4	482
FEB	404	-.039	-.070	.16	15.9	404	+17.1	-11.3	16.1	32.9	30.4	358
MAR	415	-.058	-.039	.17	12.9	414	+12.9	-10.7	13.1	33.2	30.9	358
APR	417	-.051	+.004	.13	10.1	417	+15.7	- 1.9	10.2	25.3	32.4	388
MAY	419	-.072	-.002	.20	10.3	418	+17.8	- 4.9	10.5	28.5	32.7	385
JUN	419	-.035	+.003	.10	9.9	419	+15.3	+ 9.5	9.9	27.7	29.4	349
JUL	423	-.080	-.015	.44	5.1	421	+29.1	+ 2.4	5.7	30.1	26.9	482
AUG	421	-.047	-.017	.26	6.1	420	+31.9	+ 1.8	6.3	29.5	32.0	435
SEP	420	-.053	+.010	.19	8.2	419	+27.9	+ 1.8	8.4	30.4	33.2	468
OCT	419	-.039	+.013	.11	10.4	418	+17.3	- 4.6	10.4	29.7	34.0	476
NOV	416	-.015	-.001	.03	12.9	416	+18.3	-12.4	12.9	29.1	31.8	374
DEC	413	-.018	+.016	.06	13.8	412	+22.0	-15.2	13.9	29.4	35.5	494
WIN	409	-.006	-.040	.09	14.6	409	+19.0	-16.5	14.6	32.8	34.1	1334
SPG	417	-.056	-.008	.15	11.3	416	+15.5	- 5.7	11.4	29.1	32.3	1131
SMR	421	-.050	-.015	.22	7.1	420	+26.3	+ 4.1	7.3	30.1	29.6	1266
AUT	418	-.034	+.015	.10	10.6	418	+21.3	- 4.5	10.6	30.2	33.6	1318
12 km												
JAN	296	+.028	-.157	.35	12.0	299	+18.3	-18.6	12.8	28.3	28.0	390
FEB	293	+.017	-.136	.21	14.1	294	+18.0	-11.6	14.4	23.3	22.6	329
MAR	304	-.026	-.128	.22	13.0	304	+13.9	- 9.3	13.4	25.7	22.6	327
APR	307	-.044	-.008	.07	11.5	306	+16.2	- 3.1	11.5	17.5	22.6	367
MAY	312	-.041	-.017	.09	12.9	311	+15.5	- 4.6	13.0	22.4	25.4	362
JUN	315	+.017	-.066	.12	12.2	314	+15.4	+ 7.4	12.3	20.9	21.5	343
JUL	322	-.064	-.042	.20	10.9	320	+29.2	+ 2.9	11.1	27.3	25.4	437
AUG	316	+.044	-.124	.29	11.3	318	+34.0	+ 0.2	11.8	28.0	28.0	390
SEP	321	-.052	-.059	.19	12.2	320	+27.9	+ 0.5	12.4	27.4	29.9	387
OCT	318	-.071	-.042	.18	13.2	318	+15.0	- 4.4	13.4	27.4	29.0	399
NOV	310	+.075	-.047	.13	14.1	312	+18.5	-12.8	14.3	24.1	25.3	323
DEC	306	-.007	-.004	.02	14.0	306	+21.7	-13.6	14.0	23.8	25.6	426
WIN	298	+.026	-.098	.18	14.2	300	+19.5	-14.7	14.5	25.3	25.8	1145
SPG	307	-.027	-.040	.09	12.9	307	+15.2	-.5.5	13.0	22.0	23.7	1056
SMR	317	+.009	-.087	.18	11.7	317	+26.7	+ 3.3	11.9	27.0	25.4	1170
AUT	317	-.019	-.028	.08	13.6	317	+20.5	- 5.2	13.7	27.1	28.8	1109

Regression of air density (ρ, g/m^3), $\rho = a + b\,u + c\,v$,
on west-east (u) and south-north (v) wind speeds (knots),
with means ($\bar{\rho}$, $\bar{u}$, $\bar{v}$), standard deviations (s_ρ, s_u, s_v),
and number (N) of observations.

WIESBADEN, GERMANY, JAN 1948 - JAN 1951, SEP, DEC 1951, JAN, APR, MAY, JUL 1952 - DEC 1957, Less MAY 1950

	a	b	c	R	S	$\bar{\rho}$	$\bar{u}$	$\bar{v}$	s_ρ	s_u	s_v	N
14 km												
JAN	216	+.018	-.096	.29	6.3	218	+19.4	-15.6	6.6	23.7	19.3	311
FEB	213	+.037	-.095	.20	7.4	215	+19.7	-10.2	7.6	18.0	16.0	296
MAR	220	-.011	-.132	.31	6.3	221	+15.8	- 7.2	6.6	19.0	15.8	286
APR	222	-.060	-.007	.17	5.0	221	+14.9	- 2.9	5.1	14.0	17.6	336
MAY	227	-.054	-.007	.13	6.5	226	+11.2	- 3.4	6.5	15.2	16.4	342
JUN	230	+.000	-.084	.17	6.3	229	+11.8	+ 5.0	6.4	13.8	13.1	324
JUL	235	-.002	-.059	.15	6.7	234	+23.2	+ 3.3	6.8	19.5	17.0	387
AUG	232	+.030	-.128	.33	6.7	233	+25.2	+ 0.5	7.1	19.9	19.0	330
SEP	236	-.068	-.098	.31	7.8	234	+23.7	+ 0.0	8.2	20.7	20.4	325
OCT	233	-.089	-.072	.27	8.7	232	+14.9	- 3.1	9.0	20.4	19.2	319
NOV	226	+.038	-.005	.08	7.8	227	+16.2	- 9.7	7.8	16.9	18.2	277
DEC	223	-.026	-.015	.08	7.6	223	+20.8	-12.6	7.6	21.4	20.3	360
WIN	218	+.008	-.063	.15	7.9	219	+20.0	-12.9	8.0	21.2	18.9	967
SPG	223	-.052	-.033	.16	6.5	223	+13.9	- 4.3	6.6	16.2	16.8	964
SMR	232	+.039	-.104	.25	6.9	232	+20.3	+ 3.0	7.1	18.9	16.7	1041
AUT	232	-.033	-.031	.11	8.8	232	+18.4	- 4.0	8.9	19.9	19.7	921
16 km												
JAN	159	+.001	-.053	.23	3.9	160	+21.3	-13.3	4.0	21.2	17.0	226
FEB	158	-.004	-.048	.14	4.8	158	+19.6	- 9.9	4.8	15.1	13.5	230
MAR	161	-.004	-.085	.28	3.8	162	+15.5	- 6.9	4.0	17.0	13.2	253
APR	163	-.069	-.020	.30	3.2	162	+13.7	- 2.0	3.4	13.3	14.3	321
MAY	166	-.048	-.001	.12	4.0	166	+ 6.9	- 2.4	4.0	10.1	12.5	330
JUN	170	-.029	-.057	.19	3.7	169	+ 7.5	+ 4.3	3.7	11.0	9.5	311
JUL	173	+.012	-.052	.17	4.0	173	+15.7	+ 2.7	4.0	14.5	13.4	353
AUG	172	-.004	-.087	.30	3.9	171	+17.7	+ 1.7	4.1	15.1	14.0	301
SEP	173	-.073	-.086	.35	4.4	171	+17.5	- 0.5	4.7	13.3	14.2	278
OCT	170	-.110	-.054	.35	5.1	169	+13.4	- 2.8	5.4	15.3	13.6	277
NOV	165	+.002	-.017	.05	4.2	165	+15.5	- 9.1	4.3	13.3	14.1	239
DEC	164	-.055	-.010	.23	4.5	163	+18.5	-10.8	4.6	18.9	14.6	292
WIN	161	-.027	-.035	.15	5.0	161	+19.7	-11.3	5.1	18.6	15.1	748
SPG	164	-.068	-.023	.24	4.1	163	+11.7	- 3.5	4.2	14.0	13.5	904
SMR	171	+.026	-.079	.23	4.2	171	+13.7	+ 2.9	4.3	14.3	12.5	965
AUT	170	-.065	-.008	.17	5.4	169	+15.5	- 3.9	5.5	14.1	14.4	794

Regression of air density (ρ. g/m^3), $\rho = a + b\,u + c\,v$,
on west-east (u) and south-north (v) wind speeds (knots),
with means ($\bar{\rho}$, $\bar{u}$, $\bar{v}$), standard deviations (s_ρ, s_u, s_v),
and number (N) of observations.

TATOOSH, ISLAND, WASHINGTON, JAN 1948 - DEC 1957

	a	b	c	R	S	$\bar{\rho}$	$\bar{u}$	$\bar{v}$	s_ρ	s_u	s_v	N
10 km												
JAN	399	+.030	-.098	.17	17.7	400	+31.7	- 6.8	17.9	26.9	32.0	256
FEB	405	+.045	-.030	.08	18.0	406	+34.0	-10.7	18.1	30.1	32.1	236
MAR	402	+.026	-.042	.10	17.1	404	+35.3	- 5.2	17.2	35.5	32.8	284
APR	407	+.091	-.035	.17	15.2	410	+28.3	- 2.5	15.4	26.3	30.3	333
MAY	415	+.022	-.006	.07	10.7	416	+19.6	+ 5.1	10.7	32.3	34.3	440
JUN	416	+.000	-.002	.01	9.0	416	+23.7	+ 2.7	9.0	32.7	33.3	413
JUL	419	+.010	-.019	.08	7.0	419	+27.9	+ 9.5	7.0	25.3	29.8	455
AUG	420	+.014	-.004	.05	6.1	420	+18.9	+ 2.6	6.1	24.4	27.5	446
SEP	421	-.018	+.024	.12	6.8	420	+18.8	- 0.8	6.9	30.9	30.0	337
OCT	418	-.077	+.003	.20	11.7	415	+42.3	+ 2.9	12.0	32.0	36.7	287
NOV	415	-.029	-.007	.08	13.4	414	+42.0	+ 7.8	13.5	35.3	38.3	248
DEC	406	+.016	-.000	.03	16.4	407	+36.0	- 1.2	16.4	32.7	35.0	267
WIN	403	+.034	-.038	.08	17.7	404	+33.9	- 6.0	17.7	30.1	33.4	759
SPG	410	+.007	-.005	.02	15.0	410	+26.6	- 0.1	15.0	32.2	33.0	1057
SMR	419	+.003	-.006	.03	7.6	419	+23.5	+ 5.0	7.6	27.8	30.4	1314
AUT	419	-.063	+.002	.19	11.0	417	+33.1	+ 2.9	11.2	34.5	34.9	872
12 km												
JAN	291	+.011	-.074	.14	12.9	292	+29.2	- 8.3	13.0	20.3	25.0	198
FEB	292	+.209	-.052	.26	16.6	299	+31.3	-11.7	17.2	21.1	23.8	181
MAR	292	+.108	-.111	.26	14.6	296	+32.1	- 6.0	15.1	29.8	22.9	227
APR	299	+.177	-.116	.28	15.3	304	+25.7	- 2.8	16.0	21.0	23.7	288
MAY	310	+.100	-.023	.19	13.8	312	+20.3	+ 5.1	14.0	26.1	23.6	371
JUN	309	+.156	-.016	.31	12.6	312	+22.5	+ 3.5	13.3	25.7	25.8	351
JUL	315	+.146	-.103	.28	11.9	318	+29.0	+11.7	12.4	21.8	25.6	405
AUG	317	+.064	-.073	.18	10.5	318	+20.2	+ 5.5	10.7	23.9	23.2	384
SEP	323	-.037	+.004	.09	11.8	322	+22.4	+ 1.3	11.9	28.3	25.7	281
OCT	319	-.080	-.023	.15	15.2	316	+39.9	+ 5.2	15.4	25.8	28.3	225
NOV	308	+.076	-.007	.14	15.6	311	+39.4	+ 2.3	15.8	29.5	34.4	196
DEC	298	+.040	-.038	.08	15.7	299	+37.0	- 2.5	15.8	26.5	25.9	217
WIN	293	+.092	-.054	.15	15.6	297	+32.7	- 7.2	15.8	23.2	25.3	596
SPG	303	+.066	-.015	.11	16.2	305	+25.1	- 0.3	16.3	26.0	23.9	886
SMR	314	+.118	-.059	.24	12.1	317	+24.0	+ 7.1	12.4	24.1	25.1	1140
AUT	319	-.052	-.007	.10	14.8	317	+32.7	+ 2.8	14.9	29.2	29.2	702

Regression of air density (ρ, g/m^3), $\rho = a + b\,u + c\,v$,
on west-east (u) and south-north (v) wind speeds (knots),
with means ($\bar{\rho}$, $\bar{u}$, $\bar{v}$), standard deviations (s_ρ, s_u, s_v),
and number (N) of observations.

TATOOSH, ISLAND, WASHINGTON, JAN 1948 - DEC 1957

	a	b	c	R	s	$\bar{\rho}$	$\bar{u}$	$\bar{v}$	s_ρ	s_u	s_v	N
14 km												
JAN	215	-.035	-.038	.12	7.2	215	+25.9	- 9.5	7.2	16.3	19.6	152
FEB	213	+.148	-.073	.35	8.0	218	+28.4	-11.2	8.6	20.0	17.6	151
MAR	215	+.013	-.117	.23	7.6	217	+25.0	- 6.0	7.8	18.3	15.6	200
APR	219	+.090	-.098	.27	7.5	221	+19.1	- 2.8	7.8	14.5	17.6	252
MAY	226	+.046	-.016	.12	7.0	227	+14.9	+ 4.6	7.0	17.3	15.6	342
JUN	227	+.118	-.033	.28	7.1	229	+15.3	+ 4.3	7.4	16.9	15.8	308
JUL	231	+.169	-.076	.38	7.0	235	+24.0	+10.7	7.6	16.9	18.4	351
AUG	235	+.101	-.102	.32	6.7	235	+18.7	+ 6.7	7.1	18.2	16.9	346
SEP	239	-.035	-.008	.08	9.3	238	+22.1	+ 2.2	9.3	21.3	18.5	239
OCT	235	-.029	-.069	.15	10.9	234	+35.4	+ 3.0	11.0	17.6	19.9	183
NOV	227	+.000	+.008	.02	11.3	227	+31.6	+ 2.8	11.3	22.1	26.2	143
DEC	218	+.016	+.004	.04	9.1	218	+32.0	- 5.8	9.1	20.3	20.8	164
WIN	215	+.060	-.022	.14	8.4	217	+28.8	- 8.7	8.5	19.2	19.5	467
SPG	223	-.014	+.002	.03	8.5	222	+18.8	- 0.4	8.5	17.2	16.9	794
SMR	230	+.143	-.059	.33	7.4	233	+19.5	+ 7.4	7.8	17.7	17.3	1005
AUT	236	-.059	-.016	.12	11.2	234	+28.8	+ 2.6	11.3	21.3	21.1	565
16 km												
JAN	159	-.020	-.004	.06	4.7	159	+20.4	-11.2	4.7	15.7	16.7	108
FEB	158	+.088	-.041	.28	5.7	160	+22.6	-10.8	5.9	18.7	13.4	123
MAR	159	-.007	-.111	.36	4.4	160	+19.3	- 5.0	4.7	14.9	15.0	179
APR	161	+.043	-.062	.21	4.6	162	+13.9	- 2.1	4.7	12.5	13.8	234
MAY	167	+.026	-.015	.08	4.2	167	+10.1	+ 3.8	4.3	12.2	11.2	319
JUN	169	+.064	-.050	.20	4.3	169	+ 7.9	+ 4.9	4.4	10.7	10.3	288
JUL	172	+.142	-.091	.37	4.3	174	+13.7	+ 7.1	4.6	11.3	12.6	313
AUG	173	+.074	-.077	.31	3.8	173	+13.6	+ 5.4	4.0	13.7	10.6	309
SEP	175	+.052	-.026	.13	6.0	175	+18.1	+ 1.1	6.0	13.4	11.9	208
OCT	171	+.017	-.113	.22	7.1	171	+27.8	+ 1.2	7.3	14.0	14.3	156
NOV	166	+.010	+.039	.10	8.6	166	+23.9	+ 0.5	8.7	18.1	21.5	117
DEC	161	-.009	-.070	.39	6.6	161	+26.3	- 8.1	6.6	18.2	15.2	122
WIN	159	+.059	+.009	[illegible]	5.9	160	+23.2	-10.0	5.9	17.8	15.2	353
SPG	164	-.043	+.002	.11	5.4	164	+13.6	- 0.3	5.4	13.5	13.6	732
SMR	171	+.122	-.065	.33	4.5	172	+11.8	+ 5.8	4.8	12.3	11.3	910
AUT	172	-.051	-.012	.11	7.9	171	+22.6	+ 1.0	7.9	15.5	15.4	481

Regression of air density (ρ, g/m^3), $\rho = a + b\,u + c\,v$, on west-east (u) and south-North (v) wind speeds (knots), with means ($\bar{\rho}$, $\bar{u}$, $\bar{v}$), standard deviations (s_ρ, s_u, s_v), and number (N) of observations.

GREAT FALLS, MONTANA, FEB 1948 - DEC 1957

	a	b	c	R	S	$\bar{\rho}$	$\bar{u}$	$\bar{v}$	s_ρ	s_u	s_v	N
10 km												
JAN	401	+.053	-.089	.23	13.3	405	+42.2	-10.8	13.7	34.8	32.4	228
FEB	402	+.069	-.119	.26	15.2	407	+44.2	-16.0	15.7	31.5	32.5	224
MAR	407	-.021	-.030	.08	14.2	407	+38.0	-13.7	14.2	29.6	32.6	256
APR	416	-.042	-.055	.22	10.1	413	+32.3	- 1.0	10.3	32.2	33.1	296
MAY	420	-.013	-.058	.26	6.7	419	+23.2	+ 3.3	7.0	31.4	30.6	333
JUN	420	-.008	-.023	.12	6.4	420	+30.[illegible]	+ 9.5	6.4	31.8	32.1	327
JUL	423	-.024	-.053	.37	4.2	422	+38.6	+14.3	4.6	23.1	28.9	347
AUG	424	-.026	-.025	.25	3.7	423	+33.9	+12.6	3.9	23.0	27.6	286
SEP	423	-.058	-.012	.22	6.9	421	+36.3	+ 0.5	7.1	25.9	30.1	267
OCT	421	-.075	-.026	.29	8.7	418	+36.6	- 3.5	9.1	31.4	38.7	260
NOV	411	+.019	-.061	.17	14.7	413	+42.5	-18.8	14.9	29.6	41.2	197
DEC	410	-.011	-.086	.24	13.6	411	+44.6	-14.3	14.0	[illegible]	37.4	195
WIN	404	+.043	-.102	.24	14.3	407	+43.6	-13.7	14.7	[illegible]	34.1	647
SPG	416	-.053	-.018	.15	11.6	414	+30.5	- 3.1	11.7	[illegible]	32.8	885
SMR	422	-.014	-.032	.20	5.2	421	+34.6	+12.2	5.3	26.6	29.7	960
AUT	420	-.056	-.015	.16	10.8	418	+38.1	- 6.2	10.9	29.1	37.4	724
12 km												
JAN	290	+.086	-.113	.28	10.8	294	+38.0	- 7.3	11.3	25.4	22.8	198
FEB	289	+.139	-.275	.44	13.5	298	+40.2	-12.4	15.1	24.7	23.4	199
MAR	293	+.093	-.095	.24	11.5	297	+32.7	-10.6	11.8	20.5	21.2	237
APR	307	-.022	-.137	.26	12.4	306	+27.6	- 1.0	12.9	22.9	23.5	260
MAY	315	+.037	-.104	.22	11.8	316	+23.5	+ 1.3	12.1	24.0	23.5	290
JUN	315	+.122	-.036	.33	11.0	319	+31.7	+10.9	11.6	28.5	30.9	266
JUL	325	+.049	-.070	.23	8.4	325	+43.0	+17.1	8.7	21.9	27.9	278
AUG	323	+.033	-.031	.15	6.9	324	+41.5	+13.1	7.0	23.2	27.3	240
SEP	322	-.010	-.072	.18	11.2	321	+41.8	+ 0.8	11.4	26.8	28.0	226
OCT	320	-.053	-.090	.23	12.8	318	+38.3	- 0.7	13.1	24.9	29.5	202
NOV	299	+.157	-.191	.41	16.1	309	+40.9	-16.6	17.6	27.2	33.3	152
DEC	302	-.018	-.147	.28	14.2	303	+41.8	-14.8	14.8	24.8	27.8	172
WIN	293	+.083	-.196	.35	13.4	298	+39.9	-11.4	14.3	25.0	24.8	569
SPG	307	-.024	-.046	.08	14.5	307	+27.6	- 3.1	14.5	22.9	23.4	787
SMR	320	+.097	-.045	.28	9.4	323	+38.7	+13.8	9.8	25.2	28.9	784
AUT	316	+.017	-.069	.14	14.6	317	+40.4	- 4.3	14.7	26.3	30.9	580

Regresion of air density (ρ, g/m^3), $\rho = a + b\,u + c\,v$,
on west-east (u) and south-north (v) wind speeds (knots),
with means ($\bar{\bar{\rho}}$, $\bar{\bar{u}}$, $\bar{\bar{v}}$), standard deviations (s_ρ, s_u, s_v),
and number (N) of observations.

GREAT FALLS, MONTANA, FEB 1948 - DEC 1957

	a	b	c	R	S	$\bar{\bar{\rho}}$	$\bar{\bar{u}}$	$\bar{\bar{v}}$	s_ρ	s_u	s_v	N
14 km												
JAN	215	+.020	-.039	.13	5.8	216	+34.8	- 6.3	5.8	21.3	17.3	174
FEB	213	+.044	-.217	.46	7.4	217	+36.1	-10.1	8.4	22.2	18.5	184
MAR	216	+.002	-.089	.27	5.7	216	+29.3	- 8.8	5.9	17.3	17.6	219
APR	223	-.067	-.080	.32	5.7	222	+23.6	+ 1.5	6.0	18.2	17.6	243
MAY	229	+.028	-.126	.28	6.2	229	+19.0	+ 1.6	6.5	14.4	14.2	265
JUN	230	+.132	-.055	.41	6.5	233	+23.9	+ 8.8	7.2	19.4	20.4	233
JUL	242	+.055	+.042	.15	8.1	243	+32.7	+14.2	8.2	18.0	20.6	241
AUG	236	+.122	-.049	.37	5.5	239	+33.0	+11.7	6.0	16.9	18.9	214
SEP	239	-.021	-.115	.31	8.2	238	+37.5	- 0.1	8.6	19.7	22.8	208
OCT	235	+.001	-.122	.29	9.2	235	+37.0	- 0.2	9.6	18.5	22.6	184
NOV	219	+.094	-.213	.45	10.6	225	+33.6	-14.3	11.9	20.2	25.2	130
DEC	222	-.064	+.098	.33	8.3	221	+38.6	-11.8	8.8	22.9	23.1	149
WIN	216	+.004	-.130	.32	7.6	218	+36.4	- 9.3	8.0	22.2	19.7	507
SPG	225	-.093	-.027	.20	7.9	223	+23.6	- 1.6	8.1	17.1	17.1	727
SMR	235	+.145	-.033	.33	7.8	239	+29.8	+11.6	8.3	18.6	20.1	688
AUT	232	+.027	-.087	.19	10.8	234	+36.3	- 3.7	11.0	19.5	24.1	522
16 km												
JAN	160	-.036	+.008	.24	3.7	159	+26.9	- 6.6	3.9	24.5	15.7	159
FEB	157	-.001	-.210	.55	4.7	160	+27.2	- 9.9	5.7	19.9	14.7	168
MAR	159	-.010	-.059	.22	3.7	159	+22.1	- 6.8	3.8	14.2	13.9	213
APR	164	-.074	+.040	.31	3.4	162	+15.9	+ 1.6	3.6	14.0	13.7	224
MAY	169	-.039	-.167	.43	3.8	169	+13.4	+ 1.1	4.2	9.5	10.8	252
JUN	172	+.074	-.064	.35	4.1	172	+13.8	+ 6.5	4.3	14.2	14.0	212
JUL	178	+.047	-.010	.12	4.7	179	+16.8	+ 9.2	4.8	12.1	13.2	228
AUG	177	+.048	-.014	.18	3.7	177	+20.7	+ 7.0	3.8	13.3	13.2	199
SEP	175	-.047	-.163	.42	5.2	175	+26.4	- 1.3	5.7	19.2	14.1	190
OCT	172	-.006	-.150	.37	6.1	171	+27.8	+ 0.5	6.6	16.0	15.9	169
NOV	162	+.007	-.174	.39	7.3	165	+24.3	-11.0	7.9	17.0	18.1	125
DEC	164	-.101	-.080	.39	5.5	162	+30.0	-11.0	6.0	19.5	16.5	138
WIN	161	-.048	-.096	.33	5.1	160	+27.9	- 9.1	5.4	21.5	15.7	465
SPG	165	-.110	-.029	.26	5.3	164	+16.9	- 1.2	5.5	13.1	13.3	689
SMR	175	+.088	-.013	.23	5.1	176	+17.0	+ 7.6	5.2	13.5	13.5	639
AUT	171	-.020	-.085	.19	7.6	171	+26.3	- 3.2	7.7	17.6	16.5	484

Regression of air density (ρ, g/m^3), $\rho = a + b\,u + c\,v$, on west-east (u) and south-north (v) wind speeds (knots), with means ($\bar{\rho}$, $\bar{u}$, $\bar{v}$), standard deviations (s_ρ, s_u, s_v), and number (N) of observations.

COLUMBIA, MISSOURI, JAN 1948 - DEC 1957

	a	b	c	R	S	$\bar{\rho}$	$\bar{u}$	$\bar{v}$	s_ρ	s_u	s_v	N
14 km												
JAN	221	+.098	-.059	.34	6.3	227	+60.5	-3.0	6.7	21.9	23.0	230
FEB	221	+.088	-.053	.37	5.5	226	+57.2	+2.3	5.9	23.4	28.2	236
MAR	221	+.075	-.023	.33	5.2	225	+55.4	+0.9	5.5	24.9	20.0	277
APR	234	-.009	+.050	.14	7.0	233	+43.9	+2.0	7.1	20.2	19.1	328
MAY	240	+.012	-.010	.04	7.2	241	+33.5	-1.7	7.2	18.4	20.2	382
JUN	252	-.058	+.051	.18	7.6	251	+29.2	-1.2	7.7	19.3	19.0	432
JUL	259	-.110	+.034	.36	5.3	257	+19.9	-6.2	5.7	18.4	16.2	405
AUG	256	-.058	+.054	.25	5.5	254	+23.4	-6.5	5.7	18.9	17.7	382
SEP	249	+.018	+.001	.07	5.6	249	+32.5	-6.7	5.6	21.8	18.3	359
OCT	241	+.059	+.030	.20	7.6	243	+33.1	-2.8	7.8	22.6	19.5	360
NOV	238	-.082	+.060	.25	7.7	234	+41.8	-4.2	8.0	24.4	27.1	235
DEC	228	+.026	-.012	.08	7.4	229	+55.3	-0.8	7.4	23.2	26.9	221
WIN	224	+.068	-.042	.24	6.6	227	+57.7	-0.5	6.8	22.9	26.2	687
SPG	237	-.086	+.006	.21	9.0	234	+43.1	+0.2	9.2	22.8	19.9	987
SMR	256	-.097	+.034	.27	6.7	254	+24.3	-4.5	6.9	19.3	17.9	1219
AUT	244	-.030	+.023	.08	9.2	243	+35.0	-4.6	9.2	23.1	21.3	954
16 km												
JAN	166	+.036	-.025	.15	4.6	168	+46.2	-3.1	4.7	18.7	17.1	208
FEB	163	+.076	-.035	.36	4.1	167	+46.8	+1.6	4.4	20.2	20.3	199
MAR	163	+.065	+.004	.36	3.5	166	+42.6	-0.1	3.8	20.7	14.9	238
APR	172	-.028	+.045	.18	4.3	171	+32.4	+1.7	4.3	15.8	13.9	291
MAY	177	-.035	+.015	.09	4.4	176	+21.6	-2.1	4.5	12.0	14.3	333
JUN	185	-.074	+.062	.20	5.3	183	+15.7	-0.6	5.4	12.1	13.5	324
JUL	190	-.113	+.059	.36	4.2	189	+ 9.4	-5.1	4.5	13.1	10.4	297
AUG	189	-.140	+.032	.42	3.7	188	+11.3	-3.4	4.0	11.7	9.3	280
SEP	184	-.010	+.039	.12	3.9	184	+22.4	-4.9	4.0	13.5	11.6	273
OCT	177	+.047	+.040	.16	5.9	179	+24.4	-2.5	6.0	15.1	13.6	307
NOV	175	-.087	+.095	.37	5.6	171	+33.3	-2.8	6.0	20.0	19.8	195
DEC	169	-.022	+.021	.10	4.9	168	+40.7	-1.1	4.9	18.5	18.4	194
WIN	166	+.031	-.018	.13	4.7	168	+44.6	-0.9	4.7	19.3	18.7	601
SPG	174	-.093	+.016	.29	5.6	171	+31.1	-0.2	5.8	18.2	14.4	862
SMR	188	-.141	+.032	.34	5.0	186	+12.2	-3.0	5.3	12.6	11.5	901
AUT	181	-.038	+.059	.22	6.9	179	+26.0	-3.4	7.1	16.6	14.8	775

Regression of air density (ρ, g/m^3), $\rho = a + b\,u + c\,v$, on west-east (u) and south-north (v) wind speeds (knots), with means ($\bar{\rho}$, $\bar{u}$, $\bar{v}$), standard deviations (s_ρ, s_u, s_v), and number (N) of observations.

COLUMBIA, MISSOURI, JAN 1948 - DEC 1957

	a	b	c	R	S	$\bar{\rho}$	$\bar{u}$	$\bar{v}$	s_ρ	s_u	s_v	N
10 km												
JAN	415	-.007	-.034	.12	10.5	415	+70.2	-0.5	10.6	34.4	36.7	334
FEB	415	+.001	-.038	.15	10.1	415	+61.1	+4.4	10.3	32.3	41.6	336
MAR	413	+.011	-.033	.11	10.4	413	+63.5	+1.7	10.5	34.5	34.7	405
APR	421	-.030	-.006	.09	8.8	419	+45.9	+3.8	8.9	27.5	31.2	442
MAY	423	-.048	-.030	.35	4.3	422	+35.1	+3.5	4.6	24.2	30.9	517
JUN	423	-.045	-.044	.38	3.4	422	+27.8	+0.2	3.7	19.8	23.2	541
JUL	423	-.052	-.033	.41	2.7	422	+22.1	-4.5	3.0	20.0	17.6	502
AUG	422	-.029	-.020	.26	2.8	422	+22.3	-7.0	2.9	21.2	20.2	476
SEP	424	-.037	-.042	.37	3.5	423	+28.5	-5.3	3.8	23.8	22.2	451
OCT	424	-.063	+.020	.23	6.8	422	+31.8	-2.9	7.0	25.8	28.7	470
NOV	422	-.122	+.013	.33	10.6	416	+46.4	-4.9	11.2	31.5	36.6	353
DEC	413	+.009	-.015	.05	11.7	414	+59.7	-0.8	11.7	33.2	41.7	316
WIN	415	+.001	-.028	.10	10.8	415	+63.7	+1.2	10.8	33.6	40.2	1016
SPG	421	-.057	-.019	.22	8.6	418	+47.0	+3.0	8.8	30.9	32.2	1364
SMR	423	-.041	-.033	.34	3.0	422	+24.2	-3.6	3.2	20.5	20.8	1519
AUT	424	-.100	+.007	.34	7.6	421	+34.7	-4.3	8.1	27.9	29.2	1274
12 km												
JAN	300	+.131	-.113	.38	12.0	310	+70.7	-5.4	13.0	30.2	30.8	266
FEB	305	+.071	-.062	.24	11.4	310	+65.9	+1.3	11.7	30.6	36.8	296
MAR	300	+.121	-.067	.33	11.3	308	+64.8	+1.1	12.0	30.0	28.2	320
APR	320	+.005	+.055	.13	12.3	320	+51.1	+5.0	12.4	25.2	29.9	382
MAY	329	-.042	+.004	.13	8.0	328	+40.6	+2.5	8.1	24.9	30.1	474
JUN	334	-.047	-.010	.20	5.5	332	+32.7	+0.4	5.6	22.6	25.8	512
JUL	336	-.079	-.001	.52	3.0	334	+25.2	-5.3	3.5	22.5	20.8	470
AUG	334	-.042	+.022	.29	3.7	333	+27.1	-7.5	3.9	23.6	24.0	443
SEP	331	-.010	-.011	.08	4.8	331	+34.7	-5.5	4.9	26.2	24.0	423
OCT	325	+.023	+.046	.15	9.5	326	+35.8	-3.6	9.6	26.0	25.9	420
NOV	320	+.083	+.027	.19	11.9	316	+47.7	-5.9	12.2	29.8	33.8	289
DEC	309	+.035	-.038	.12	12.4	312	+63.6	+1.0	12.5	30.0	34.5	259
WIN	305	+.076	-.067	.24	12.1	310	+66.7	-1.0	12.4	30.4	34.4	821
SPG	324	-.078	+.014	.16	13.3	320	+50.6	+2.9	13.5	28.2	29.6	1176
SMR	335	-.060	-.000	.30	4.3	333	+28.5	-4.0	4.5	23.1	23.9	1425
AUT	328	-.060	+.030	.16	10.5	325	+38.4	-4.9	10.6	27.6	27.5	1132

Regression of air density (ρ, g/m^3), $\rho = a + b\,u + c\,v$, on west-east (u) and south-north (v) wind speeds (knots), with means ($\bar{\rho}$, $\bar{u}$, $\bar{v}$), standard deviations (s_ρ, s_u, s_v), and number (N) of observations.

WASHINGTON, D. C. JAN 1948 - DEC 1957

	a	b	c	R	S	$\bar{\rho}$	$\bar{u}$	$\bar{v}$	s_ρ	s_u	s_v	N
10 km												
JAN	406	+.042	-.042	.18	13.6	409	+74.1	- 4.6	13.8	39.8	39.5	476
FEB	413	+.006	-.025	.07	13.3	413	+72.5	- 0.3	13.4	31.5	38.0	410
MAR	408	+.043	-.042	.18	12.4	411	+74.5	- 2.7	12.6	36.9	35.0	476
APR	421	-.069	-.086	.34	9.5	419	+50.5	- 6.3	10.1	32.9	31.0	562
MAY	422	-.048	-.050	.36	5.9	420	+42.4	- 3.7	6.3	29.1	29.8	625
JUN	422	-.039	-.020	.31	3.5	422	+24.7	- 9.0	3.7	23.6	29.3	680
JUL	423	-.075	-.003	.57	2.7	421	+26.7	- 8.1	3.3	24.6	23.2	686
AUG	422	-.026	-.038	.35	3.1	421	+29.3	- 3.5	3.3	22.9	24.1	575
SEP	423	-.030	-.059	.49	3.5	422	+36.6	+ 4.6	4.0	23.1	27.6	531
OCT	422	-.035	-.102	.46	7.2	421	+29.9	+ 7.2	8.2	26.0	34.8	593
NOV	420	-.077	-.092	.41	11.0	415	+55.7	+ 9.9	12.1	33.7	40.1	490
DEC	407	+.049	-.056	.17	14.7	411	+75.4	+ 2.7	14.9	34.6	39.0	388
WIN	408	+.033	-.039	.14	14.0	411	+74.0	- 1.0	14.1	35.7	39.0	1274
SPG	420	-.060	-.064	.28	10.1	417	+54.3	- 4.3	10.5	35.4	31.8	1663
SMR	422	-.049	-.021	.39	3.2	421	+26.8	- 7.0	3.5	23.9	25.9	1941
AUT	423	-.076	-.088	.46	8.1	419	+39.9	+ 7.2	9.1	29.7	34.4	1614
12 km												
JAN	296	+.121	-.037	.31	13.2	305	+70.8	- 3.7	13.9	33.8	29.7	406
FEB	304	+.064	-.063	.20	13.8	309	+74.6	- 1.5	14.1	31.0	31.0	364
MAR	298	+.115	-.053	.34	13.0	307	+76.7	- 3.5	13.8	36.8	31.9	422
APR	323	-.082	-.114	.27	14.1	319	+51.7	- 8.4	14.6	29.5	27.8	520
MAY	326	+.002	-.082	.24	10.6	326	+44.6	- 6.0	10.9	29.3	31.5	572
JUN	332	-.038	-.018	.17	7.2	331	+27.4	-11.6	7.3	26.3	30.7	655
JUL	336	-.086	+.007	.51	4.0	333	+29.1	-10.5	4.6	28.1	27.7	671
AUG	335	-.079	-.014	.46	4.1	332	+33.7	- 3.3	4.7	25.8	29.5	543
SEP	333	-.067	-.033	.41	4.9	330	+42.9	+ 4.9	5.4	26.3	31.6	490
OCT	325	+.009	-.104	.32	9.6	325	+35.5	+ 6.2	10.1	25.8	31.3	561
NOV	317	+.000	-.144	.40	12.0	316	+56.0	+ 7.9	13.1	30.1	35.8	439
DEC	297	+.172	-.079	.35	15.2	309	+72.9	+ 1.2	16.2	32.1	31.4	341
WIN	299	+.120	-.052	.28	14.2	307	+72.7	- 1.5	14.8	32.4	30.7	1111
SPG	322	-.066	-.093	.24	14.7	319	+56.0	- 6.1	15.1	34.3	30.5	1514
SMR	334	-.065	-.007	.31	5.5	332	+29.9	- 8.8	5.8	26.9	29.5	1869
AUT	327	-.057	-.096	.33	10.8	324	+44.0	+ 6.3	11.3	28.5	32.8	1490

Regression of air density (ρ, g/m^3), $\rho = a + b\,u + c\,v$,
on west-east (u) and south-north (v) wind speeds (knots),
with means ($\bar{\rho}$, $\bar{u}$, $\bar{v}$), standard deviations (s_ρ, s_u, s_v),
and number (N) of observations.

WASHINGTON, D. C. JAN 1948 - DEC 1957

	a	b	c	R	S	$\bar{\rho}$	$\bar{u}$	$\bar{v}$	s_ρ	s_u	s_v	N
14 km												
JAN	219	+.099	-.077	.43	6.8	225	+61.2	- 0.6	7.6	28.6	21.4	363
FEB	221	+.080	-.054	.30	7.1	226	+65.7	- 1.1	7.4	22.8	22.2	322
MAR	220	+.082	-.048	.40	6.5	226	+63.1	- 4.5	7.1	28.4	23.0	383
APR	235	-.056	-.149	.30	9.1	233	+43.9	- 7.5	9.6	22.6	18.4	497
MAY	240	+.021	-.132	.29	9.0	241	+37.5	- 5.4	9.4	20.9	21.0	546
JUN	249	-.058	-.055	.21	8.6	248	+23.3	-12.3	8.8	21.0	21.0	633
JUL	257	-.089	+.005	.35	5.7	254	+24.5	-10.9	6.1	24.1	20.5	652
AUG	257	-.134	-.014	.47	5.6	254	+30.1	- 3.6	6.4	22.0	21.2	519
SEP	254	-.100	-.019	.36	5.9	250	+39.7	+ 3.5	6.3	21.4	24.9	465
OCT	242	+.045	-.117	.32	8.2	243	+33.8	+ 3.8	8.7	19.7	24.2	513
NOV	235	-.022	-.129	.40	8.1	234	+47.8	+ 6.6	8.9	22.7	26.4	399
DEC	219	+.128	-.067	.37	9.5	227	+62.1	+ 0.5	10.2	28.0	22.8	284
WIN	219	+.104	-.064	.36	7.8	226	+63.0	- 0.4	8.4	26.7	22.1	969
SPG	237	-.079	-.126	.29	10.4	234	+46.6	- 5.9	10.8	25.9	20.8	1426
SMR	254	-.084	-.009	.25	7.5	252	+25.7	- 9.3	7.7	22.6	21.2	1804
AUT	246	-.069	-.095	.29	9.8	243	+39.9	+ 4.5	10.3	21.9	25.2	1377
16 km												
JAN	164	+.063	-.077	.32	5.2	167	+47.4	+ 0.3	5.5	21.8	17.0	323
FEB	163	+.069	-.007	.27	5.4	167	+52.7	- 1.5	5.6	21.8	17.1	292
MAR	165	+.034	-.042	.23	4.8	167	+48.7	- 2.7	4.9	22.6	16.4	352
APR	171	-.045	-.109	.31	5.3	171	+32.0	- 6.2	5.6	18.8	14.1	487
MAY	175	+.021	-.129	.35	5.0	176	+24.2	- 4.4	5.4	14.9	14.7	523
JUN	182	-.074	-.074	.25	5.5	182	+12.3	- 8.1	5.7	13.8	12.7	592
JUL	187	-.088	-.042	.36	3.8	186	+11.2	- 7.5	4.1	15.0	12.5	616
AUG	189	-.176	+.005	.54	3.7	186	+17.0	- 3.7	4.4	13.4	12.1	489
SEP	188	-.170	-.012	.54	3.9	184	+26.0	+ 1.1	4.6	14.4	14.7	426
OCT	179	+.012	-.152	.39	5.9	179	+25.5	+ 2.5	6.4	14.3	16.5	462
NOV	173	-.032	-.124	.40	5.9	172	+37.0	+ 5.2	6.4	18.1	19.8	373
DEC	163	+.075	-.049	.26	6.7	167	+45.6	+ 0.6	6.9	22.2	16.8	260
WIN	164	+.066	-.045	.27	5.8	167	+48.6	- 0.2	6.0	22.1	17.0	875
SPG	174	-.078	-.106	.35	6.0	172	+33.3	- 4.6	6.4	20.9	15.0	1362
SMR	186	-.095	-.022	.27	5.1	185	+13.2	- 6.6	5.3	14.4	12.6	1697
AUT	182	-.126	-.123	.42	6.9	178	+29.1	+ 2.8	7.6	16.4	17.1	1261

Regression of air density (ρ, g/m^3), $\rho = a + b\,u + c\,v$,
on west-east (u) and south-north (v) wind speeds (knots),
with means ($\bar{\rho}$, $\bar{u}$, $\bar{v}$), standard deviations (s_ρ, s_u, s_v),
and number (N) of observations.

SANTA MARIA, CALIFORNIA, JAN 1948 - DEC 1957

	a	b	c	R	S	$\bar{\rho}$	$\bar{u}$	$\bar{v}$	s_ρ	s_u	s_v	N
14 km												
JAN	231	+.075	-.058	.20	7.8	234	+34.1	- 4.5	8.0	18.7	20.3	194
FEB	234	+.002	-.039	.12	6.5	234	+31.5	- 8.6	6.6	18.3	20.0	260
MAR	231	+.047	-.096	.29	5.8	233	+37.0	+ 0.4	6.1	16.0	17.5	249
APR	236	+.005	-.072	.21	6.0	236	+31.2	- 1.2	6.1	16.4	18.4	327
MAY	240	+.009	.099	.25	6.9	241	+29.8	- 0.2	7.2	16.1	18.4	328
JUN	250	-.040	-.034	.18	6.8	249	+26.4	+ 5.4	6.9	20.1	21.1	378
JUL	257	-.114	+.029	.38	4.2	256	+15.0	+15.2	4.6	14.9	13.1	507
AUG	255	-.091	-.011	.26	5.4	253	+20.7	+15.8	5.6	15.9	14.8	418
SEP	254	-.060	-.013	.19	5.3	253	+26.6	+ 7.5	5.4	16.3	15.1	361
OCT	248	-.014	+.012	.06	5.3	247	+24.5	+ 2.3	5.3	17.0	18.2	396
NOV	248	-.104	-.008	.29	6.9	246	+20.0	- 5.1	7.2	19.9	17.8	327
DEC	239	-.033	-.009	.10	6.8	238	+28.8	- 7.2	6.8	20.0	19.9	190
WIN	235	+.003	-.035	.10	7.3	235	+31.5	- 7.0	7.3	19.1	20.1	644
SPG	237	-.012	-.085	.22	7.0	237	+32.3	- 0.4	7.2	16.4	18.2	904
SMR	255	-.121	+.033	.34	6.0	253	+20.1	+12.6	6.4	17.5	16.9	1303
AUT	250	-.047	+.043	.15	6.6	249	+23.8	+ 1.8	6.7	17.9	17.8	1084
16 km												
JAN	171	+.061	-.110	.28	5.6	173	+26.1	- 3.2	5.8	15.5	13.2	162
FEB	173	-.030	-.054	.17	5.4	173	+24.0	- 7.4	5.5	14.8	14.1	212
MAR	171	+.007	-.020	.06	4.1	172	+29.3	+ 0.2	4.1	12.7	13.7	217
APR	173	+.006	-.092	.32	3.4	173	+22.8	- 0.2	3.6	12.4	12.5	309
MAY	177	-.013	-.093	.26	4.5	177	+19.5	+ 0.8	4.5	11.8	12.5	320
JUN	185	-.102	-.056	.31	4.9	183	+14.2	+ 3.3	5.2	13.3	12.5	340
JUL	189	-.099	+.042	.32	3.2	189	+ 3.4	+ 8.8	3.4	10.7	9.2	459
AUG	188	-.073	+.037	.22	3.8	188	+ 6.3	+ 8.4	3.9	10.8	10.4	360
SEP	189	-.126	-.015	.34	4.2	187	+12.5	+ 3.8	4.4	11.8	10.2	303
OCT	183	-.053	+.015	.18	4.0	182	+17.7	+ 2.1	4.0	13.4	11.5	355
NOV	182	-.110	-.045	.36	4.9	180	+15.6	- 5.4	5.2	15.3	12.6	294
DEC	177	-.058	+.010	.18	5.0	176	+19.6	- 7.6	5.1	15.8	14.6	163
WIN	174	-.025	-.053	.15	5.7	174	+23.3	- 6.2	5.7	15.6	14.1	537
SPG	175	-.046	-.058	.22	4.5	174	+23.2	+ 0.3	4.6	12.8	12.8	846
SMR	188	-.159	+.048	.42	4.5	187	+ 7.5	+ 7.1	4.9	12.5	10.9	1159
AUT	135	-.122	+.048	.32	5.1	183	+15.4	+ 0.3	5.4	13.7	12.1	952

Regression of air density (ρ, g/m^3), $\rho = a + b\,u + c\,v$,

on west-east (u) and south-north (v) wind speeds (knots),

with means ($\bar{\rho}$, $\bar{u}$, $\bar{v}$), standard deviations (s_ρ, s_u, s_v),

and number (N) of observations.

SANTA MARIA, CALIFORNIA, JAN 1948 - DEC 1957

	a	b	c	R	S	$\bar{\rho}$	$\bar{u}$	$\bar{v}$	s_ρ	s_u	s_v	N
10 km												
JAN	421	-.012	+.006	.03	12.3	420	+31.5	- 9.3	12.3	27.8	27.7	344
FEB	425	-.066	+.004	.21	8.2	423	+26.3	-10.9	8.4	26.7	28.8	373
MAR	423	-.029	-.040	.17	8.7	422	+31.5	- 7.8	8.8	23.8	28.0	399
APR	424	-.028	+.008	.12	6.2	423	+27.4	- 5.0	6.2	26.1	29.4	437
MAY	424	-.032	-.001	.12	6.1	423	+27.1	- 6.5	6.2	22.2	27.8	455
JUN	424	-.026	+.011	.17	3.5	423	+23.7	+ 3.5	3.5	23.3	26.8	511
JUL	423	-.018	-.032	.22	2.8	422	+17.7	+12.9	2.9	17.3	16.1	589
AUG	425	-.027	-.070	.46	2.8	423	+22.5	+14.2	3.2	19.9	17.5	525
SEP	424	-.039	-.029	.15	7.7	422	+25.3	+ 8.6	7.8	23.1	19.7	471
OCT	424	-.033	-.009	.20	4.2	424	+19.4	- 1.2	4.3	23.0	26.0	469
NOV	426	-.070	+.013	.29	5.5	425	+17.2	- 6.7	5.7	23.7	24.3	416
DEC	425	-.056	-.013	.27	6.3	424	+29.2	-10.7	6.5	29.1	29.8	320
WIN	424	-.047	-.000	.14	9.4	422	+28.9	-10.3	9.5	27.9	28.7	1037
SPG	423	-.032	-.008	.12	7.1	423	+28.5	- 6.4	7.1	24.1	28.4	1291
SMR	423	-.020	-.021	.20	3.1	423	+21.2	+10.4	3.2	20.4	21.0	1625
AUT	424	-.050	-.012	.21	6.0	423	+20.8	+ 0.5	6.2	23.5	24.3	1356
12 km												
JAN	316	+.069	-.050	.14	13.4	319	+36.3	- 6.2	13.6	24.9	24.5	273
FEB	321	-.023	+.012	.05	10.6	320	+32.7	-10.0	10.6	23.0	24.0	310
MAR	318	+.058	-.150	.30	11.6	321	+37.2	- 3.7	12.1	21.4	24.6	316
APR	325	-.012	-.058	.15	10.0	324	+32.7	5.0	10.1	23.6	24.4	374
MAY	328	-.016	-.038	.12	9.4	328	+32.0	- 6.0	9.4	21.4	27.0	388
JUN	332	-.022	-.026	.19	5.6	331	+28.1	+ 4.4	5.7	25.8	29.0	447
JUL	335	-.068	-.007	.39	2.9	333	+19.2	+17.3	3.1	17.8	16.8	551
AUG	334	-.043	-.058	.38	3.7	332	+26.2	+18.4	4.0	21.1	19.1	480
SEP	332	+.003	-.055	.08	12.1	331	+30.8	+ 9.4	12.1	20.6	18.7	418
OCT	329	+.014	-.031	.12	5.6	329	+24.8	+ 2.1	5.7	21.7	21.9	434
NOV	331	-.105	-.008	.29	8.4	329	+19.3	- 7.3	8.8	23.8	23.2	375
DEC	325	-.036	-.020	.13	9.7	324	+33.3	-10.1	9.8	27.6	27.0	252
WIN	321	-.001	-.023	.05	11.7	321	+34.1	- 8.8	11.7	25.1	25.2	835
SPG	324	-.008	-.076	.18	10.7	324	+33.8	- 4.3	10.9	22.3	25.5	1078
SMR	334	-.048	-.019	.27	4.2	332	+24.2	+13.8	4.4	21.9	22.7	1478
AUT	330	-.024	-.014	.07	9.3	330	+25.2	+ 1.7	9.3	22.5	22.3	1227

Regression of air density (ρ, g/m^3), $\rho = a + b\,u + c\,v$, on west-east (u) and south-north (v) wind speeds (knots), with means ($\bar{\rho}$, $\bar{u}$, $\bar{v}$), standard deviations (s_ρ, s_u, s_v), and number (N) of observations.

CAPE CANAVERAL, Florida, FEB 1950 - SEP 1957

	a	b	c	R	S	$\bar{\rho}$	$\bar{u}$	$\bar{v}$	s_ρ	s_u	s_v	N
10 km												
JAN	427	-.085	-.019	.55	4.6	423	+57.0	- 1.9	5.5	32.7	30.5	587
FEB	427	-.068	-.031	.61	3.3	423	+60.2	+ 2.2	4.2	31.7	29.8	577
MAR	428	-.073	-.020	.61	2.9	423	+64.2	- 5.1	3.6	28.5	27.8	595
APR	425	-.060	-.008	.55	2.9	423	+47.9	- 8.8	3.5	32.8	23.6	597
MAY	424	-.052	-.010	.51	2.3	423	+27.9	- 1.6	2.7	24.6	20.3	663
JUN	422	-.018	+.003	.21	2.0	422	+ 7.4	- 5.7	2.0	22.9	15.2	608
JUL	422	-.040	+.020	.29	1.9	422	- 5.0	- 2.7	2.0	14.1	12.4	706
AUG	421	-.035	-.005	.24	2.2	421	- 0.1	- 1.2	2.3	15.2	12.4	679
SEP	421	-.032	-.041	.39	2.3	421	+ 8.9	+ 2.2	2.5	15.9	16.6	667
OCT	422	-.029	-.031	.39	3.1	421	+32.6	+ 6.3	3.3	27.5	25.9	627
NOV	425	-.058	-.030	.55	2.9	422	+52.4	- 0.4	3.4	24.6	26.0	595
DEC	427	-.075	-.017	.67	2.8	423	+62.8	+ 1.8	3.8	31.2	27.0	560
WIN	427	-.076	-.022	.59	3.7	423	+59.9	+ 0.7	4.6	32.0	29.2	1724
SPG	425	-.046	-.017	.48	2.9	423	+46.0	- 5.0	3.3	32.4	24.1	1855
SMR	422	-.027	+.002	.23	2.1	422	+ 0.5	- 3.1	2.2	18.3	13.4	1993
AUT	422	-.010	-.045	.36	3.0	421	+30.5	+ 2.8	3.2	29.1	23.3	1889
12 km												
JAN	334	-.084	-.053	.47	7.2	328	+65.8	- 3.0	8.1	35.8	30.9	553
FEB	329	-.028	-.031	.24	5.9	327	+75.2	+ 1.3	6.1	32.9	30.4	542
MAR	334	-.067	-.030	.37	5.6	329	+75.7	- 7.5	6.0	28.4	29.1	550
APR	333	-.043	+.002	.33	4.5	331	+60.6	-11.2	4.8	36.8	28.3	564
MAY	334	-.048	+.019	.36	3.4	332	+39.1	- 1.6	3.7	30.1	24.9	630
JUN	335	-.025	+.005	.31	2.2	335	+10.7	- 9.0	2.3	29.4	19.0	589
JUL	336	-.013	-.002	.13	1.7	336	- 8.4	- 5.2	1.7	17.9	14.9	681
AUG	335	-.025	-.018	.32	1.9	335	+ 0.1	- 2.5	2.0	19.4	16.3	680
SEP	335	-.008	-.024	.26	2.0	335	+11.8	- 1.4	2.1	18.3	19.2	658
OCT	334	-.038	+.008	.31	3.6	332	+40.0	+ 6.1	3.8	31.7	31.1	600
NOV	334	-.042	-.022	.34	4.2	331	+63.5	- 0.6	4.4	26.4	31.6	554
DEC	336	-.066	-.016	.45	4.8	331	+72.9	+ 3.4	5.4	33.4	31.0	504
WIN	333	-.061	-.032	.37	6.4	329	+71.2	+ 0.5	6.9	34.3	30.9	1599
SPG	334	-.055	-.002	.39	4.6	331	+57.6	- 6.6	5.0	35.4	27.7	1744
SMR	335	-.026	-.003	.31	2.0	335	+ 0.3	- 5.4	2.1	23.7	16.9	1950
AUT	335	-.050	-.007	.45	3.4	333	+36.9	+ 1.4	3.8	33.4	27.8	1812

Regression of air density (ρ, g/m^3), $\rho = a + b\,u + c\,v$,
on west-east (u) and south-north (v) wind speeds (knots),
with means ($\bar{\rho}$, $\bar{u}$, $\bar{v}$), standard deviations (s_ρ, s_u, s_v),
and number (N) of observations.

CAPE CANAVERAL, FLORIDA 1950 - SEP 1957

	a	b	c	R	S	$\bar{\rho}$	$\bar{u}$	$\bar{v}$	s_ρ	s_u	s_v	N
14 km												
JAN	251	-.061	-.061	.47	5.4	248	+65.0	- 2.1	6.1	31.2	25.2	432
FEB	247	-.028	-.009	.20	4.3	246	+71.4	+ 1.2	4.4	29.6	25.1	453
MAR	248	-.020	-.017	.14	5.1	247	+72.9	- 5.4	5.2	26.3	24.9	464
APR	246	+.003	-.016	.07	5.3	247	+59.6	- 9.3	5.3	32.4	21.3	497
MAY	253	-.029	-.029	.22	5.1	252	+40.0	- 4.5	5.3	27.4	21.8	543
JUN	258	-.023	-.010	.17	3.9	258	+ 9.7	-12.8	4.0	28.8	18.0	520
JUL	259	-.009	-.036	.21	2.5	259	-11.0	- 7.5	2.6	16.5	14.1	594
AUG	259	-.024	-.023	.22	2.7	260	- 1.8	- 4.3	2.8	18.4	15.1	581
SEP	260	+.002	-.005	.03	2.8	260	+10.7	- 2.6	2.8	18.4	17.3	577
OCT	256	-.056	+.064	.39	4.3	255	+35.0	+ 4.5	4.7	27.4	24.9	502
NOV	253	-.018	-.028	.21	4.8	252	+59.7	- 0.2	4.9	25.6	26.9	424
DEC	253	-.042	-.009	.23	5.7	250	+67.1	+ 2.3	5.8	30.4	24.4	376
WIN	251	-.050	-.026	.31	5.5	248	+67.9	+ 0.4	5.8	30.5	25.0	1261
SPG	251	-.044	-.008	.25	5.7	249	+56.7	- 6.4	5.9	31.9	22.8	1504
SMR	259	-.030	-.010	.22	3.2	259	- 1.5	- 8.1	3.3	23.2	16.1	1695
AUT	259	-.086	+.027	.49	4.6	256	+32.6	+ 0.5	5.2	31.0	23.1	1503
16 km												
JAN	188	-.069	-.003	.40	3.8	184	+51.9	- 0.9	4.1	23.2	19.5	325
FEB	187	-.058	-.003	.29	3.8	184	+53.7	+ 2.2	4.0	20.6	17.9	367
MAR	186	-.029	-.012	.16	4.0	184	+56.5	- 3.7	4.1	21.6	19.2	391
APR	183	-.021	+.002	.15	3.4	182	+44.9	- 6.7	3.4	25.2	15.3	417
MAY	187	-.060	-.007	.30	3.8	186	+25.2	- 4.7	3.9	19.0	14.7	439
JUN	189	-.060	-.020	.31	3.4	189	+ 0.6	- 9.8	3.5	18.2	10.9	390
JUL	189	-.029	-.073	.30	2.4	190	-12.3	- 4.2	2.5	10.2	8.7	458
AUG	192	-.041	+.008	.16	2.4	192	- 7.2	- 2.5	2.5	9.9	9.4	453
SEP	192	-.022	-.014	.12	2.7	192	+ 1.6	- 1.3	2.7	12.1	10.4	455
OCT	190	-.077	+.041	.36	3.5	188	+18.9	- 0.1	3.8	18.1	15.0	373
NOV	187	-.038	-.035	.35	3.2	185	+42.1	+ 0.6	3.4	21.4	19.5	338
DEC	188	-.064	+.020	.37	3.9	185	+49.1	+ 1.2	4.2	24.5	20.0	273
WIN	188	-.065	+.003	.35	3.8	184	+51.8	+ 0.9	4.1	22.7	19.1	965
SPG	186	-.045	-.002	.28	4.0	184	+41.6	- 5.0	4.1	25.6	16.5	1247
SMR	190	-.058	+.004	.26	3.0	190	- 6.7	- 5.3	3.1	14.0	10.1	1301
AUT	191	-.103	+.004	.57	3.5	189	+18.9	- 0.4	4.2	23.9	15.0	1166

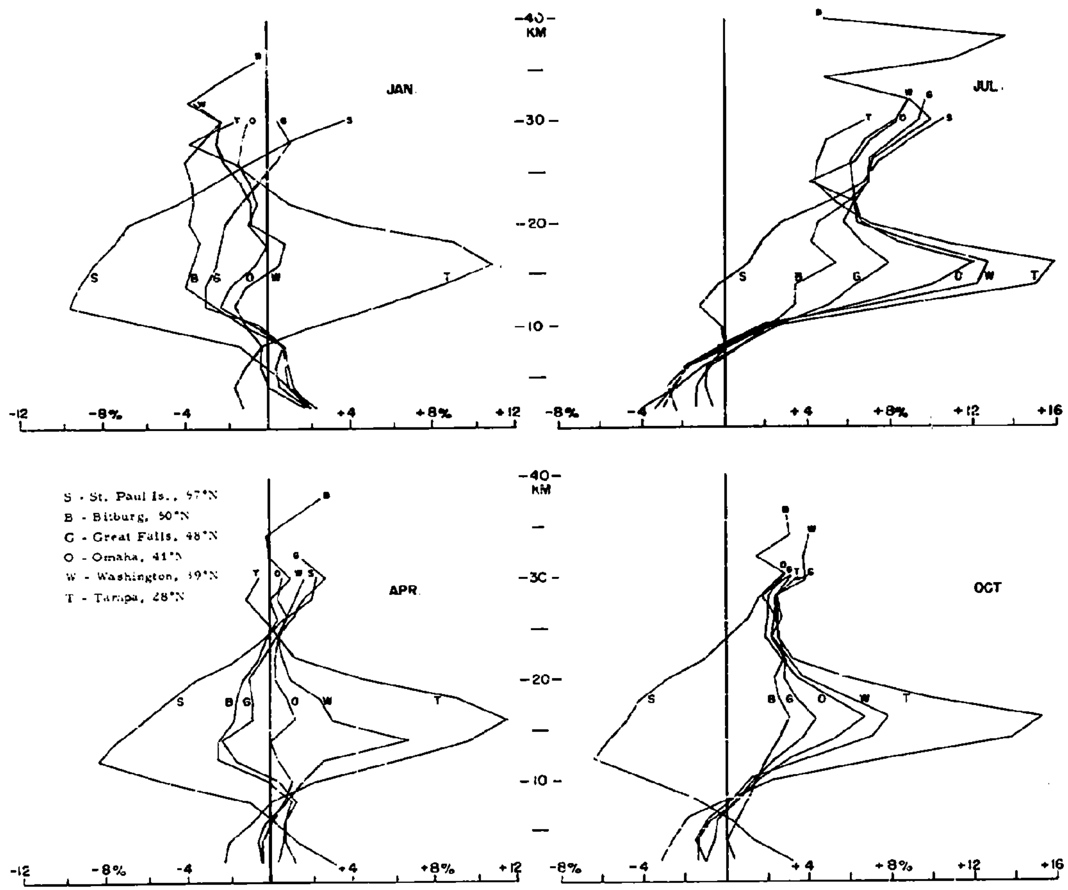

Figure 1. Latitudinal variation of mean monthly density profiles as percent departure from U.S. Standard Atmosphere 1962.

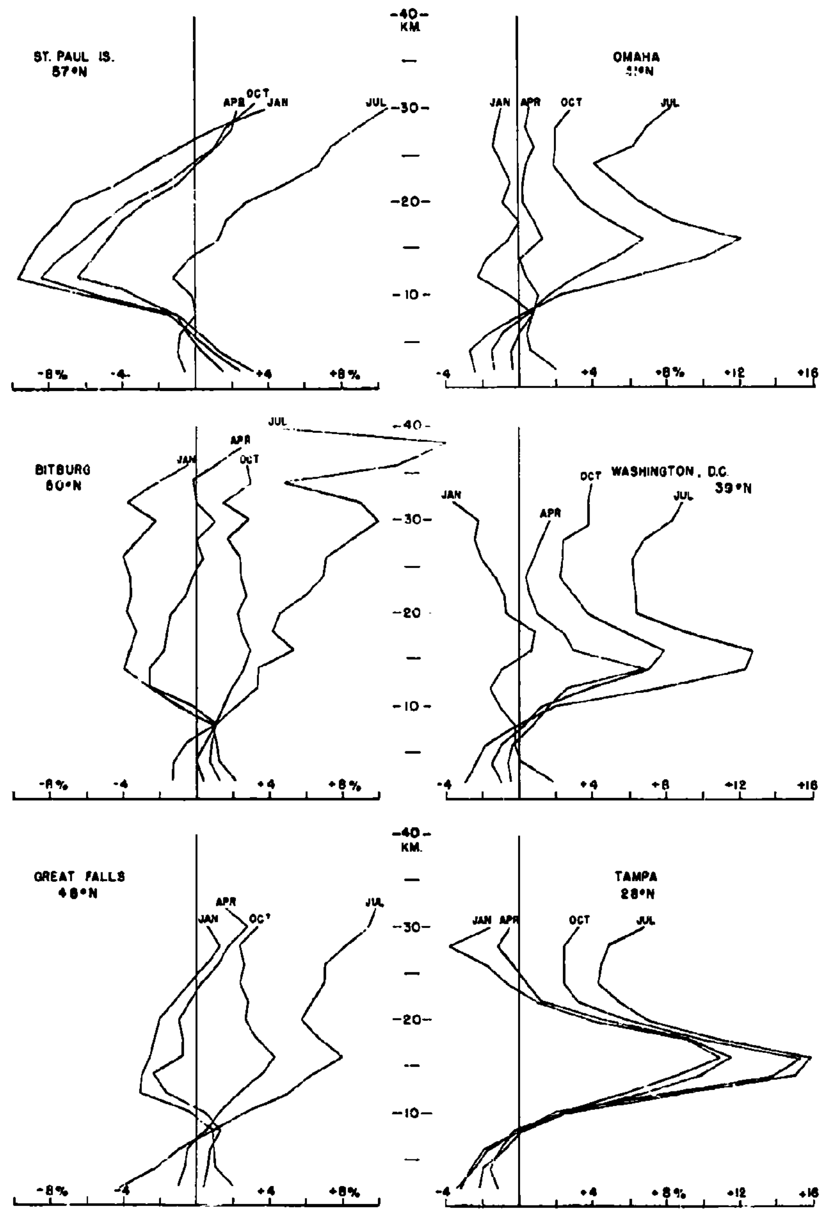

Figure 2. Seasonal variation of mean monthly density profiles as percent departure from U.S. Standard Atmosphere 1962.

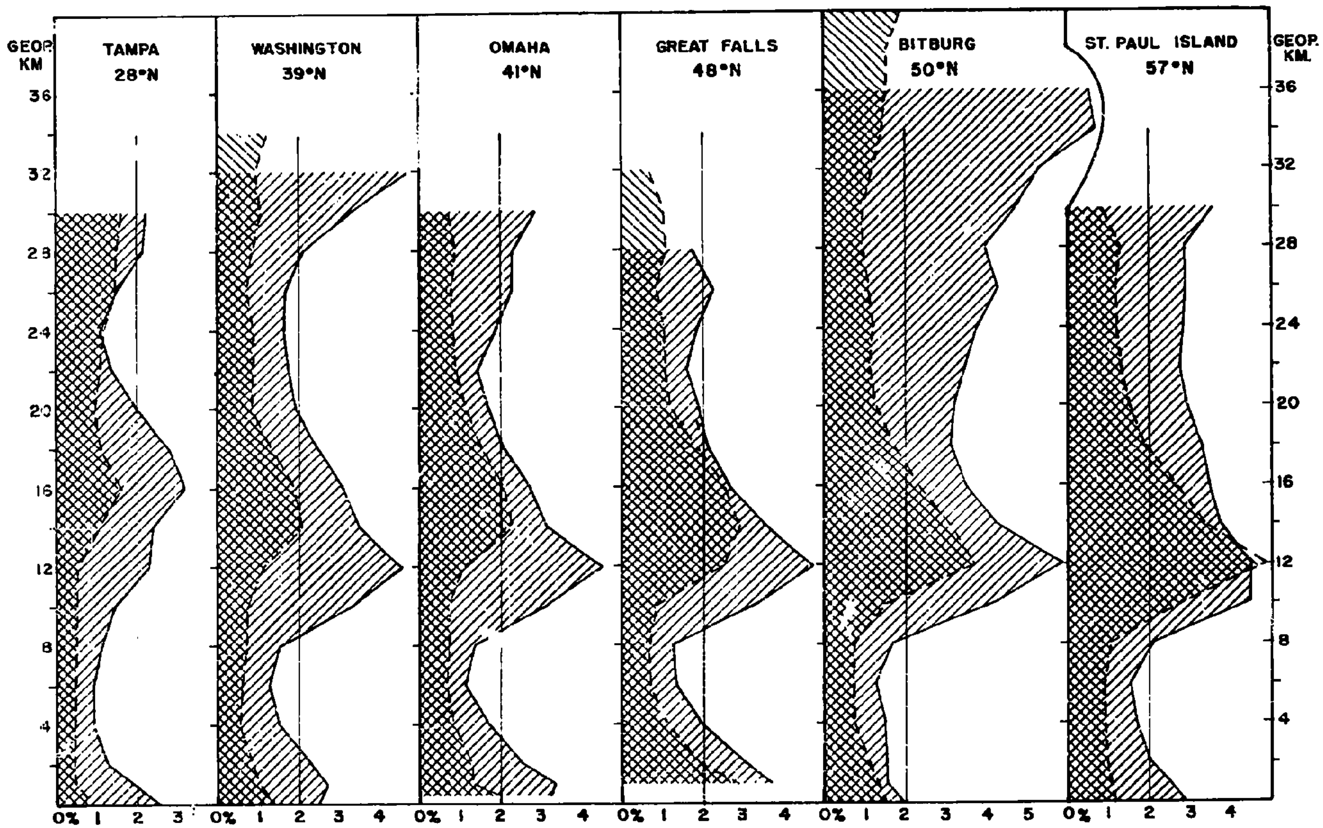

Figure 3. Coefficients of variation (100 sd/mean) around January and July means.

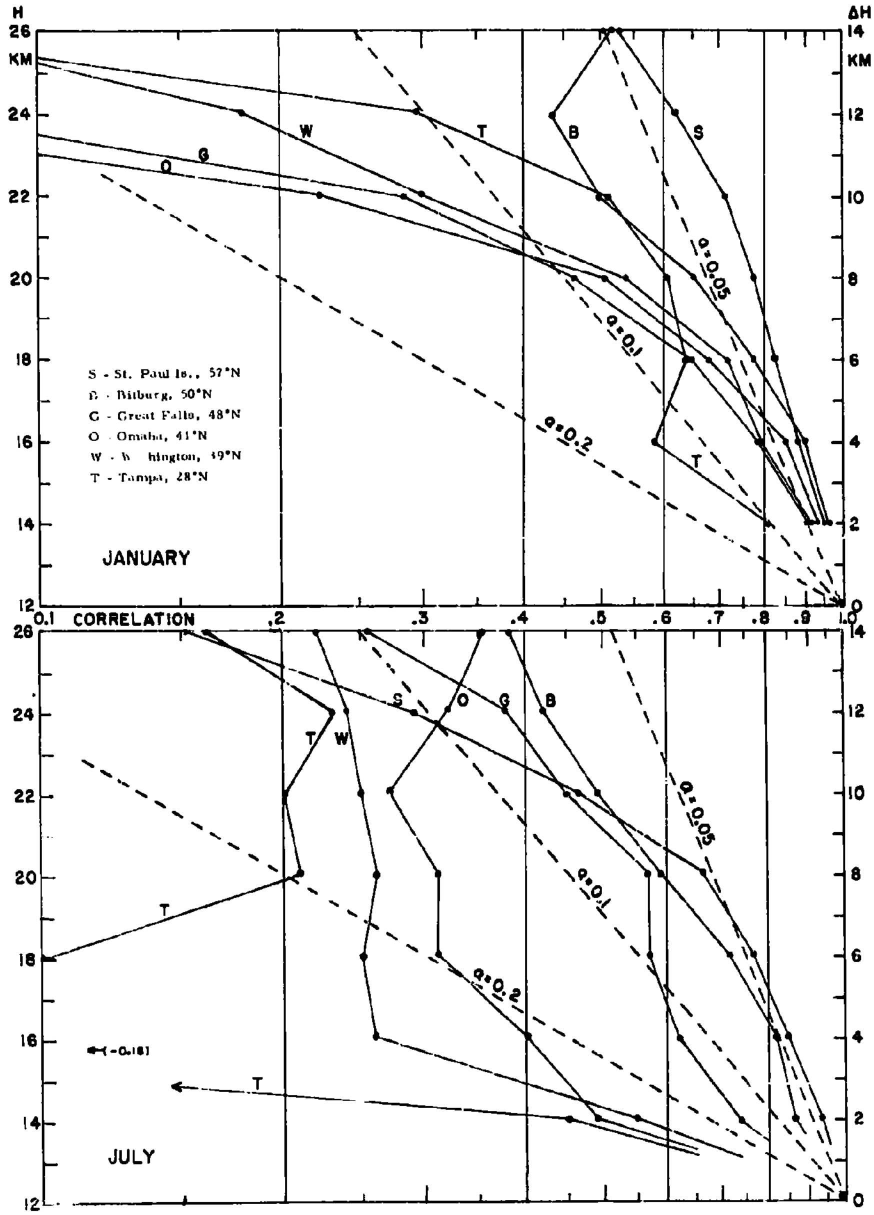

Figure 4. Coefficients of correlation between densities at 12 km and those at levels top to 24 km, January and July.

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Unclassified report

Geographical, seasonal, and day-to-day variations in vertical distribution of atmospheric density up to 30 km are analyzed. Variability is least at 7 to 8 km where densities do not depart from standard by more than 1 or 2 percent in any season or area. Between 24 and 26 km, density changes little with latitude but markedly with season. At the level of greatest seasonal variability, around 15 km, the relative departures from standard of mean seasonal densities is strictly latitudinal. Largest negative departures occur at the northernmost location; largest positive, southernmost. The greatest difference between the two extreme profiles, nearly 20 percent, occurs in winter. Largest day-to-day variations around monthly means occur near the tropopause.

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AFCRL-62-815 October 1962

ERRATA

The following corrections apply to AFCRL Research Report 62-815, Air Force Surveys in Geophysics No. 151, entitled "Density Distribution, Interlevel Correlations and Variation With Wind" and dated July 1962:

Page 4

In Table 1, Density-wind column, add 'Feb 48-Dec 57' for Great Falls, Montana and 'Jan 48-Dec 57' for Washington, D.C.

Page 6

Line 4, change to read '... shown in Figure 1 (located after the Appendices on page 109) for ...'

AIR FORCE CAMBRIDGE RESEARCH LABORATORIES
OFFICE OF AEROSPACE RESEARCH
UNITED STATES AIR FORCE
L.G. HANSCOM FIELD, MASS.